# THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LXV. SATURDAY, NOVEMBER 3, 1894. NO. 18.

## ORIGINAL ARTICLES.

### ABORTIVE AND AFEBRILE TYPHOID FEVER.[1]

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IN introducing, for discussion, the possibility of the existence of a condition which may be spoken of as "abortive" typhoid fever, or a condition presenting the symptoms of typhoid fever without the existence of the fever itself, or even with a subnormal temperature, I am well aware that I am opening a wide range for discussion, and one that may be seriously questioned. At the outset, however, I wish to urge the necessity in medicine of ever keeping one's eyes open to existing facts, and endeavoring to find an explanation for them, rather than accepting as law and gospel statements which, however backed by authority, are not necessarily final.

The books describe a *prodromal* stage of typhoid fever of greater or less length, succeeded by from five to seven days of *invasion* with its gradually ascending temperature, two weeks of *fastigium*, then the *crisis*, and the decline by *lysis*. While we all recognize that this stands as a fair representation of a type, we see every day, in actual experience, variations from this type. We are coming to learn that nothing is so fixed in medicine that it cannot be changed. We have seen hydrogen sulphid and tuberculin throned and dethroned. The years are not far past since drainage was a *sine qua non* in all surgical dressings. The theory of self-limitation of disease is itself becoming limited. There are not many of us who, suffering from an attack of acute articular rheumatism, would willingly twirl our thumbs and philosophize with Flint that the duration must necessarily be twenty-six days. We have all seen cases that had the initial symptoms of croupous pneumonia that did not go on to fruition. We have even seen wide variations in the course of diphtheria. And so with typhoid fever, we are coming to learn that there are wide variances in its manifestations; that a condition may occur without the presence of any elevation of temperature, which in other respects must be dignified by the name of "typhoid" or "enteric" fever. This fact is now being recognized in the text-books. Osler, in his *Practice of Medicine*, p. 15, says:

"There are cases decribed in which the general features of the disease have been present without the existence of fever. They are extremely rare in this country. No instance of the kind has come under my observation."

In Pepper's *System of Medicine*, vol. i, p. 299, we find reference to a description of afebrile typhoid by Liebermeister, which says:

"Many of them never show during the entire course any rise of temperature, or occasionally a slight elevation only. Enlargement of the spleen could generally be detected and occasionally an unmistakable rose-colored eruption. The action of the bowels was usually irregular; sometimes there was diarrhea; sometimes, on the other hand, obstinate constipation. The other symptoms are prostration, pain throughout the body, often headache, persistent loss of appetite with more or less swollen, furred tongue, and marked diminished frequency of the pulse, which disappeared with convalescence, while its quality was not appreciably altered."

The long duration of an apparently trifling indisposition is considered as especially characteristic.

Strube writes of an outbreak during the siege of Paris in 1870: "In many cases the temperature was subnormal."

The existence of abortive typhoid is perhaps more generally recognized. We find ample authority for believing in its existence. Strümpell, for instance, writes:

"The name belongs to cases which begin with severe symptoms and high fever, as if they were going to be grave, but in which these violent symptoms disappear after a few days and give place to a rapid convalescence."

Niemeyer, Lebert, Osler, J. C. Wilson and Fagge all recognize the existence of abortive typhoid. It seems singular to meet with such a general acquiesence in this condition when formerly it was thought that typhoid or enteric fever must necessarily run a well-defined course of invasion, fastigium, crisis, and decline, and when we had the theories of self-limitation so thoroughly dinned into us. Our ideas with reference to this affection are likely to be still further modified; for there are those who are advancing the belief, supported by pathologic evidence, that typhoid fever may exist without the presence of intestinal lesions. Karlinski cites three cases of this kind and DuCazel reports another. The last was that of a patient who for three weeks presented the symptoms of

[1] Read before the Colorado State Medical Society, at Denver, June 20, 1894.

classic typhoid fever—headache, epistaxis, meteorism, rose-spots, congestion, fever, albuminuria, with a development of bilateral pneumonia. The case terminated fatally. Upon post-mortem examination the lungs were found almost completely hepatized and the spleen enlarged, while the intestines and the mesenteric glands were perfectly uninvolved. Bacteriologic examination of the spleen, however, demonstrated the presence of typhoid-bacilli in pure culture. The case suggests the query, as pointed out by one of our medical journals, whether some more accurately descriptive name than that of "typhoid" or "enteric" fever is not needed.

We all recognize that a diagnosis in disease is based upon a grouping of the symptoms, and that by a process of careful elimination we arrive at the condition we think to be most probable, to which we give a name, and which condition we assume to represent some pathologic change. We further recognize the fact that the chain of evidence is not invariably complete, and that we do not always have all the symptoms present that are given in the text-books as belonging to a given affection. So it is with typhoid fever. We are coming to learn that diarrhea is not an invariable accompaniment of the affection; that in fact we frequently find a condition of constipation, or something akin to it. The enlarged spleen is not always to be determined. Conditions may exist to mask its detection. If it be present skilful manipulation may fail to determine its existence.

We know that great variations exist with regard to the element of temperature, and opinions may differ with reference to the presence or absence of rose spots, though in my own experience I have seldom found them wanting, even if not invariably in large numbers. Thus we see that if our diagnosis must be squared by the four so-called cardinal symptoms of "pea-soup" stools, temperature, enlarged spleen, and rose-spots we may be in error, especially with reference to the cases of afebrile typhoid. Our opinion, then, must be based upon a broad consideration of the case. We must give due weight to the presence or absence of typhoid in the community. This is a factor of no little moment, as in epidemic seasons we see wider variations from the normal. We should consider the prodromal symptoms, the method of invasion, the feeling of malaise, indisposition to work, the furred tongue, the loss of appetite, the headache, the pains in the back and throughout the body, the recurrent nose-bleed. And here it does not seem to me that we should insist upon a torrent of blood. "It may not be so deep as a well nor so wide as a church-door, but 'tis enough—'twill serve." We do not always insist that a person shall bleed a pint or a quart from the lungs in order to say that he has had hemoptysis. And so if we inquire carefully with reference to these typhoid cases I think we shall frequently find that they have had stains on their handkerchiefs sufficient to attract attention, even though they may not have had a full and free epistaxis. The appearance of the tongue, too, is significant. The furred center, not necessarily brownish, the peculiar beefsteak-red border, this coloration at the tip often taking a pyramidal shape. Wakefulness at night, with mild delirium, coupled with other symptoms, is often suggestive. The facial aspect is peculiar and sometimes diagnostic. The tympanites and tenderness in the right iliac fossa must be looked for, and in due season the rose-spots and enlarged spleen. One swallow does not necessarily make a summer, and one rose-spot does make a diagnosis of typhoid, but taken in conjunction with other symptoms its significance should never be underestimated. Furthermore, by way of confirmation, the convalescence should be considered. It has seemed to me that the convalescence from typhoid fever is somewhat diagnostic in itself. The brightness of expression, the peculiar luster of the eyes, the relish for food, the hunger, the rapid putting on of flesh, the loss of hair; the grouping of these conditions conducing to give a general appearance of convalescence which, it seems to me, is somewhat peculiar to this affection and which should help confirm our opinion.

My point then is that a careful diagnosis should be based on a well-considered grouping of the conditions and symptoms, and we should never exact too close a compliance with so-called cardinal rules. Autopsy, moreover, sometimes shows ulceration of Peyer's patches, with enlargement of the spleen, when typhoid has never been thought to exist. Such pathologic specimens have been presented to our medical societies.

It is to be noticed that I have used the term "abortive" typhoid, and not "aborted" typhoid. Whether the course of treatment has an influence in producing the result, or whether the attack is a natural sequence, I am incapable of saying.

A case that came forcibly to my attention in the summer of 1888 was one of the early ones that brought this condition to my notice. I was called to see two young men of equal age, living together in a small house in the upper end of California street. The symptoms were identical, their illnesses were synchronous, the treatment was the same. In a day or two one was dismissed as well, the temperature having come to normal and the other symptoms having cleared up. He returned to his work but was urged to be cautious. The second one ran an attack of well-defined typhoid of moderate intensity. Later on I was told that my first patient was not feeling so well, and I took the precaution to

go to his place of business and inquire, but was assured that he never felt better in his life. I was surprised a week or ten days later to be called to his bedside and to find him genuinely sick with typhoid fever. He died a few weeks later after repeated hemorrhage from the bowel. My conviction has always been that had he rested and taken care of himself at the time he was dismissed he would probably have avoided any further trouble. Such cases are not infrequent, especially in hospital-service.

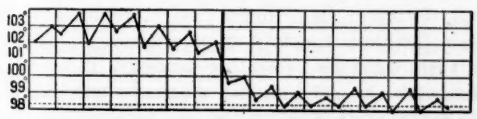
I am reminded of a somewhat similar case at the County Hospital occurring in a man who came in with what was considered to be typhoid fever in the early stage and, after a week, was dismissed as well. He returned three or four weeks later to pass through a regular course of typhoid.

It is not these cases, however, that I have especially in mind. I have cited them to note the tendency. The cases that I have spoken of as abortive are such as are described by Strümpell in the quotation just given, in which he speaks of the violent symptoms disappearing after a few days and giving place to a rapid convalescence.

In making the diagnosis care must be taken to note the previous history of the case, and not to confound it with ambulatory typhoid going on to convalesence.

The chart that I now present (No. I) is that of a young woman, a school-teacher, who, in the fall of 1890, when typhoid was prevalent, having some prodromal symptoms, took to her bed and called me at once. The chart dates from the beginning of my attendance. The attack was probably near the end of the first week,

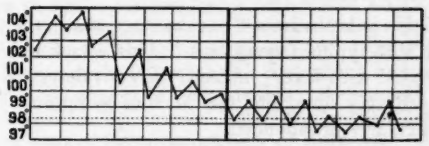
Chart I.




as rose-spots soon appeared. It was one of undoubted typhoid, the diagnosis being backed by the prodromes, the symptoms at the time and those of convalescence. She lost all her hair, which was a great privation, as it was her pride; she became quite stout; it was evidently a case of abortive typhoid.

The third case (No. V), however, is one that was under my observation from the start. It is that of a young man with a tuberculous tendency, who came to this country because of his pulmonary affection. He complained

Chart III.

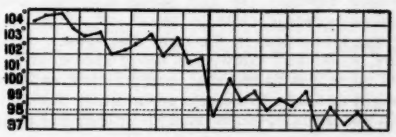



of malaise and symptoms that are usually defined as "biliousness." He had lived in a malarial region, and his case made me suspicious of a malarial outcropping, so that I purged him pretty vigorously and put him on

Chart IV.

Warburg's tincture, which simply aggravated his condition. After a few days he went to bed with a temperature as indicated, soon developing rose-spots and other well-

Chart V.



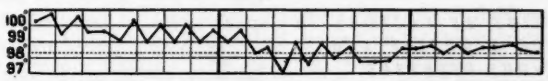

marked typhoid symptoms; but the subsidence of the fever, and the general improvement coincident therewith, justified the diagnosis of abortive typhoid.

From the foregoing condition it is but a step to the so-called *typhus levissimus*, or very mild typhoid, of which I introduce two charts.

The first is that of a young lady (No IV), occurring also in the fall of 1890, when typhoid was so prevalent, showing well-defined typhoid symptoms; the second (No. II) that of a man who a few years previously had had an attack of typhoid, and who was one of three cases, occurring at the same time, in the same house, one of which proved fatal with repeated hemorrhage from the bowel; the second running a well-defined course of typhoid.

These two cases are illustrative of conditions justly called *typhus levissimus*, occurring as they did

Chart II.




The second one (No. III) is also that of a school-teacher, about the same age as the first, and occurring the same season. She had undoubted typhoid, with a rapid convalescence. She was under my care from the time of going to bed. The temperature-chart here given represents the course of the illness while under observation. Some doubts may exist, however, with reference to this case, whether she may not have had the ambulatory form before going to bed, as she had been feeling poorly for some weeks before giving up.

in typhoid seasons, with typhoid surroundings, having typhoid symptoms, though mild, and the convalescence characteristic of the affection.

It is but a step further from *typhus levissimus* to a febrile typhoid. I recollect several such cases, two of them occurring in the fall of 1890.

One was in a prominent business-man of this town, who went to bed with typhoid symptoms, even to the rose-

spots. He had one or two slight hemorrhages from the bowel, and his condition was aggravated by stimulating food even as mild as beef-tea. He was kept in bed by his attack for the usual time, and never once did I find him with a normal temperature, but with a temperature somewhat subnormal and the pulse somewhat depressed.

A few months later I had another man under my care with typhoid symptoms. This attack was not attended with fever; indeed, the convalescence was exceedingly slow, and the nervous symptoms were particularly pronounced.

In the fall of 1892 I had under observation another man, who went into the mountains, where he subjected himself to considerable hardship, riding horseback, fishing, wading streams, sleeping out at night, and taking long journeys. He came back complaining of loss of appetite, of feeling tired, of lack of energy, and then went off on another trip to the southwestern portion of the State, and, while out driving one afternoon, was attacked with a severe chill, and hurried to Denver the following morning. He complained, in addition to the symptoms that I have mentioned, of loss of energy, loss of appetite, of fatigue, and of being sleepless. One thing that he noticed particularly was that for a week or so he had not been able to sleep; that he also had persistent pain in the small of his back of which he could not rid himself. His eyes were heavy and lusterless and his tongue furred. He had some diarrhea, and had been blowing some clots of blood out of his nostrils. There was tenderness in the right iliac fossa. His temperature, so far as I know, was never above the normal, and his pulse was subnormal, going as low as forty-two, forty-eight and fifty-two beats per minute. He had rose-spots in successive groups, and his spleen was enlarged.

I have repeatedly noticed in typhoid seasons patients with normal or subnormal temperatures whose condition I could only describe as typhoid upon whom treatment, at my hands, would make but little impression. These conditions I have come to regard as a species of afebrile typhoid and am learning to put the cases to bed at once and treat them as such, in which way I acquire the speediest and surest results.

Unquestionably, we shall have to divest ourselves of the belief that the typhoid state is invariably accompanied by the typhoid temperature, and we are learning that the condition to which we have given the name of "enteric" or "typhoid" fever is one that admits of wide variations from that which has been regarded as the type.

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## URIC-ACID LEUKOMAINS AS FACTORS IN THE ETIOLOGY OF MIGRAINE AND KINDRED NERVOUS DISEASES.

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IN THE MEDICAL NEWS of May 26, 1894, I published a paper on "Paraxanthin as a Factor in the Etiology of Certain Obscure Nervous Conditions." That paper was based on the study of a patient who had had migraine all her life till she was past sixty years of age, at which time the migrainous attacks were superseded by epileptoid paroxysms, which came at about the same interval of time as the migrainous attacks had previously occurred, and produced no bad effect on the intellectual faculties. I showed, by a careful study of this case, that it belonged to the class of cases which were formerly thought to be due to an excess of uric acid in the blood, but which at the present time, since we know that uric acid is non-toxic, are left without any very definite pathology. I found that the urine of this patient passed during and just after a paroxysm contained not only an excess of uric acid, but also a *very great excess of paraxanthin*, a poisonous leukomain of the uric-acid group. I also found that the paraxanthin-solution taken from the urine of this patient, when injected into mice, produced symptoms like those from which my patient suffered. From this study I drew the conclusion that paraxanthin-poisoning, rather than uric-acid poisoning, is an important etiologic factor in producing these epileptoid attacks.

A subsequent study of this and other so-called uric-acid cases not only confirms me in the foregoing conclusion, but it has led me to believe that the uric-acid leukomains, of which paraxanthin is the most poisonous, are important etiologic factors in producing the nervous symptoms which have heretofore been attributed to uric acid. I believe that classic migraine is a leukomain-poisoning, and that there is a form of so-called epilepsy coming on late in life, often taking the place of the migrainous attacks of previous years, which has as its most important etiologic factor the very poisonous leukomain, paraxanthin. The foregoing conclusions will, if correct, be of much clinical importance. I wish, therefore, to afford an opportunity of judging of their value by presenting herewith, in connection with my previous paper already referred to, the evidence upon which they are based.

In the beginning I must express my obligations to Mr. Otto F. Bange for the assistance he has given me in this work; the investigations by him were conducted in his private laboratory and at his own expense, his only incentive being his love of science and his desire to assist me in the study of a question that not only required a great deal of time, but also much technical knowledge.

I am also indebted to Mr. Stuart Wallingford for assisting me in my private laboratory in making a number of urine-examinations. In my previous paper I gave the technique of the urinalysis and many other important facts which here have a direct bearing, but cannot be repeated.

*Specimen No. 1.* Two gallons of normal urine were obtained from soldiers at the Newport Barracks. This specimen was a portion of the morning urine passed by a large number of strong, healthy men.

It may, therefore, be taken to represent an average normal urine. The examination was made by Mr. Bange. The final fluid was evaporated to 8 c.c. Result: Paraxanthin was not present in sufficient quantity to be detected, and the final fluid was not poisonous to mice.

*Specimen No. 2.* Two gallons of normal urine were obtained as noted, and were examined by Mr. Wallingford under my direction. The final fluid was evaporated to 8 c.c. Result: No paraxanthin or other leukomains could be detected, and the resulting fluid was not poisonous to mice.

*Specimen No. 3.* Normal urine obtained as noted. Boric acid was added, and the fluid allowed to stand three days, and then examined by myself. The final fluid was evaporated to 8 c.c. Result: No paraxanthin or other leukomains could be detected, and the resulting fluid was not poisonous to mice.

*Specimen No. 4.* One quart of urine was obtained from a case of epilepsy—*grand mal.* The secretion was passed between and just after a series of severe epileptic convulsions. The patient was a boy, fifteen years of age, with a tuberculous family history. His mother attributed his sickness to a fright which he received when five years of age. For some years he has had one or more severe epileptic convulsions a day, usually occurring at night. At short intervals a large number of violent convulsions will occur during the same day, and following these severe attacks he will be quite unmanageable for several days. He cannot dress or undress himself, and his mind is hopelessly diseased. To be brief, I may say the boy is a typical case of very severe *grand mal.*

The urine was examined by Mr. Bange, the final fluid evaporated to 4 c.c. Result: No paraxanthin or other poisonous leukomains could be found, and the resulting fluid was not poisonous to mice.

*Specimen No. 5.* Two quarts of urine were obtained from a case of epilepsy—*petit mal.* This case was under observation at my clinic at the Medical College of Ohio for some months. The patient, a boy of ten years, had a bad tuberculous and nervous history; he was anemic and poorly nourished, and had had epilepsy for "four or five years." When he came to the clinic for treatment he was having on an average one attack a day. In these attacks the boy would lose consciousness for a few moments, and then complain of being sleepy. His mother said that at all times he was nervous and irritable, and much changed in his disposition. This boy was very much improved by treatment; so much so that when I sent him to the country (in June) he had had only one attack during the previous month. The improvement in his epilepsy was no doubt due to the improvement in his general health and strength. The treatment consisted in systematic exercise in the open air, good food, including one quart of milk each day, and syrup of iron iodid and cod-liver oil. The specimen of urine examined was obtained from this boy between and after two nervous attacks, and was examined by Mr. Wallingford under my direction. The final fluid was evaporated to 6 c.c. Result: No paraxanthin or other leukomain was found, and the resulting fluid was not poisonous to mice.

*Specimen No. 6.* Four quarts of urine were obtained from a case of acute mania following influenza. This patient was an overworked business man, fifty years of age. He had had a very severe attack of mania following influenza. The maniacal symptoms lasted some weeks, and then passed off. During the eighteen months following this first attack he had a number of attacks of acute mania; they would be accompanied by intense pain in the back, and would always follow symptoms of influenza. The last attack of this kind lasted two days, and it was during this time that the specimen of urine was obtained.

The urine was examined by myself. The final fluid was evaporated to 6 c.c. Result: No paraxanthin or other leukomains of the xanthin-group could be found. The resulting fluid was not poisonous to mice.

*Specimen No. 7.* Four quarts of urine passed by a patient during and after a severe attack of migraine. This patient was a German woman, thirty-three years of age, whom I had known for many years as a sick-headache sufferer. Her mother and one of her sisters also have the same disease. During the many years that I have known her she has often come to me hoping to get relief from these migrainous attacks, which came every two or three weeks and utterly prostrated her, confining her to bed for from twelve to twenty-four hours. At these times her stomach would reject all food, and she would suffer from intense headache. She was a great meat-eater and beer-drinker. A number of times I succeeded in making her quite comfortable and free from headaches for months at a time. The treatment at these times consisted in stopping the beer and fresh meat, giving her instead vegetables, fruit, eggs, and milk, *ad libitum.* The medicinal treatment was a dose of Carlsbad salts each morning and five drops of tincture of veratrum viride when the patient suspected an attack was coming on. When she would adhere to this treatment she suffered very much less from migraine. But always after some months of caretaking she would lapse into her old habits of eating and drinking, and the migrainous attacks would take on their former severity.

The urine was examined by Mr. Bange, and the final fluid evaporated to 10 c.c. Results: Paraxanthin and other leukomains of the xanthin-group were found in considerable quantities. The resulting fluid responded to the chemic tests for paraxanthin, and a drop of the fluid evaporated on a glass slide showed under the microscope paraxanthin-crystals, and when injected into mice this fluid produced poisonous symptoms resembling paraxanthin-poisoning. In this way the resulting fluid was shown to contain a substance which responded to the chemic, microscopic, and physiologic tests for paraxanthin. In the evaporation, other xanthin-leukomains crystallized out, but the fluid was not sufficiently evaporated to get rid of these leukomains and give a pure solution of paraxanthin, as was done in the case reported in my previous paper. The resulting fluid in this case was, therefore, a solution of the

leukomains of the xanthin-group, the most important of which is paraxanthin.

*First experiment.* Five minims of this fluid were injected into a full-grown house-mouse. In five minutes the mouse was very nervous, its breathing very rapid, its muscles twitching. The muscular twitching gave way to convulsive movements, and the mouse died fifteen minutes after the injection.

*Second experiment.* A second mouse was injected with two and a half minims of the same fluid. In fifteen minutes it did not resist handling, was apathetic, and its breathing rapid and labored. After the mouse had remained in this condition for a half-hour a second injection of two-and-one-half minims was given; three minutes later convulsive movements came on and continued till the mouse died, fifteen minutes after the last injection.

*Specimen No. 8.* Two gallons of urine were obtained from a patient in whom migrainous attacks were superseded by epileptoid attacks after she was sixty years of age. This is the same case so fully described in my previous paper, already referred to. The urine was passed between and for some days after two very severe attacks which occurred the same day. The urine was examined by Mr. Bange, and the final fluid evaporated to 8 c.c. Result: Paraxanthin and other leukomains of the xanthin-group were found in considerable quantities, and the resulting fluid was very poisonous to mice. From the resulting fluid hypoxanthin, xanthin, and other leukomains were eliminated, so as to have as pure a solution of paraxanthin as possible; this solution responded to the chemic, microscopic, and physiologic tests for paraxanthin.

The concentration and strength of this 8 c.c. of paraxanthin-solution is shown by its very poisonous effects on mice. If one minim of this solution was injected into the peritoneal cavity of a mouse it produced increased nervous excitability and convulsions, followed by general tetanic muscular contractions, which always terminated in death. The small quantity of the paraxanthin-solution (one minim) required to produce this effect, when compared with the non-poisonous effect of ten or twenty minims of the "resultant fluid" from normal urine, shows that in this case paraxanthin was enormously increased in quantity in the urine passed by this patient during or just after an epileptoid attack.

From the foregoing examinations and experiments the following summary may be made:

1. Two gallons of normal urine do not, by the method used, yield an appreciable quantity of paraxanthin or other leukomains of the xanthin-group.

2. One quart of *grand mal* epileptic urine passed between and after severe epileptic convulsions did not yield an appreciable quantity of paraxanthin or other leukomains of the xanthin-group.

3. Two quarts of *petit mal* epileptic urine, passed just before and after an attack, did not yield an appreciable quantity of paraxanthin or other leukomains of the xanthin-group.

4. Four quarts of urine from a case of influenza-mania, passed during the attack, did not contain an appreciable quantity of paraxanthin or other leukomains of the xanthin-group.

5. Four quarts of urine, passed during and after a severe migrainous attack, yielded considerable quantities of paraxanthin and other leukomains of the xanthin-group.

6. Eight quarts of urine, passed during and after a migrainous epileptoid attack, yielded comparatively large quantities of paraxanthin and other leukomains of the xanthin-group.

Upon the above investigations here summarized I base the following conclusions:

1. Normal urine contains such a small quantity of uric-acid leukomains that they cannot be detected in such quantities of urine as can conveniently be obtained from one person for urinalysis.

2. Many pathologic urines, including the urines in *grand mal*, *petit mal*, and influenza-mania, contain so small a quantity of the poisonous uric-acid leukomains that it is highly improbable that they act as etiologic factors in the production of these diseases.

3. Urine passed during an attack of migraine or migrainous epilepsy contains such comparatively large quantities of paraxanthin and other leukomains of the xanthin-group as to make it highly probable that they act as important etiologic factors in the production of these diseases.

At the present time there is probably no fallacy more deeply rooted in the medical mind than that uric acid and its compounds are toxic, and that they produce by their direct action on the nervous system a number of nervous diseases. The uric-acid theory of nervous disorders has never been supported by chemic or physiologic experiment. But it has been such a convenient theory to cloak our ignorance concerning the etiology of so many diseased conditions, that now we are loath to give it up, even in the light of the experiments which in recent years have demonstrated that it is non-toxic, and that it can only produce disease in a mechanical or reflex way by reason of its insolubility in the body-media. But the time has now come for us to discard, once and for all, the idea that uric acid and its compounds, by their presence in solution in the blood, can produce nervous symptoms. In accepting the non-toxicity of uric acid and its compounds we are compelled to seek another explanation for the nervous disorders which have heretofore been thought to be due to the toxicity of these substances. But in doing so we must not forget that uric acid and its compounds, by reason of their insolubility, may be pathologic factors in gravel, gout, and other diseased conditions, and that the term uric-acid diathesis is rightfully used to describe the condition in which, either from increased production or defi-

cient elimination, there is an excess of uric acid or its compounds either in the blood or in the tissues.

In some diseases, such, for example, as gout, which belong to the uric-acid diathesis, the distressing symptoms are no doubt due to the precipitation in the tissues or elsewhere of the comparatively insoluble urates; but in other diseases, such for example as migraine, which may also be classed as coming under the uric-acid diathesis, the uric acid, although it may occur in excess in the blood and urine of these cases, has nothing whatever to do with producing the constitutional symptoms. It is a sign, but not a cause of these diseases. The extensive and valuable studies of Haig and others have clearly demonstrated that there is a form of migraine and a form of epilepsy in which the excretion of uric acid and the proportion of uric acid to urea in the urine are greatly increased during the paroxysm of these diseases, but these carefully-made observations were misinterpreted to mean that uric acid in the blood was the cause of these diseases. My investigations show that in a case of migraine and in a case of migrainous epilepsy there was in the urine passed by these patients during their attacks, not only an increase of uric acid and an increase in the ratio of uric acid to urea, but there was also found a very great increase of the poisonous leukomains of the uric-acid group, and the paraxanthin-solution from the migrainous-epilepsy case produced in mice symptoms very like those from which my patient suffered.

These obervations tempt me to offer the following substitute for the uric-acid hypothesis in explaining the etiology of migraine and kindred nervous disorders.

*First.* Typical migraine is due to the action on the nervous centers of soluble, poisonous uric-acid leukomains. The presence of an excess of these leukomains in the blood precipitates an attack of migrane, which is terminated by their elimination through the stomach and kidneys.

*Second.* Leukomain-epilepsy is a form of epilepsy etiologically quite distinct from the other forms of epilepsy. It is caused by the action on the nervous centers of paraxanthin and other poisonous leukomains of the uric-acid group, which by their presence in the blood precipitate an attack. Leukomain-epilepsy usually supersedes migraine; it commonly comes on after middle life, and does not, as a rule, impair the intellect.

The foregoing is offered only as a working hypothesis, to be confirmed or disproved by subsequent work in this field.

### NOTES ON TREATMENT.

In the case of migraine I got, as noted, fairly good results from Haig's dietetic treatment. No wine or malt liquors and no fresh meat were allowed, but milk, eggs, fruits, and vegetables, *ad libitum*. But in the case of leukomain-epilepsy very little good was accomplished by this treatment; however, when sodium phosphate, Carlsbad salts, or sodium salicylate was added to the treatment the patient was benefited. After some weeks without medicinal treatment this patient was placed upon potassium permanganate, one grain three times a day. At the present writing (August 12th) she has been taking the permanganate for two-and-one-half months, and has apparently derived more benefit from it than from the other medicines named. She passed a longer interval (seven weeks) without having an attack under the permanganate treatment than after any other. I am not at all sanguine about the therapeutic value of potassium permanganate in leukomain-poisoning, but only mention it here because it was suggested by the fact that I found it to be a good antidote for paraxanthin-poisoning in the mouse.

In my studies I was struck by the fact (as noted in my previous paper) that the most poisonous leukomains of the uric-acid group, viz., paraxanthin, xanthin, and gerontin, each have two atoms of O, while uric acid has three. Uric acid is, therefore, a more highly oxidized body than these poisonous leukomains. These facts suggested the use of potassium permanganate in leukomain-poisoning, because of its well-known oxidizing properties. I do not wish to offer the foregoing observations as an explanation of the action of the permanganate in paraxanthin-poisoning, but only mention them because they suggested its use in this condition. Before using the drug in the case of leukomain-epilepsy, as already narrated, the following experiments were made.

*Experiment No. 1.* One minim of the paraxanthin-solution obtained from the leukomain-epilepsy case + one minim of distilled water, was injected into the peritoneal cavity of a house-mouse; the mouse died from paraxanthin-poisoning with the symptoms previously detailed (control-experiment).

*Experiment No. 2.* One minim of the same paraxanthin-solution + one minim of a one per cent. solution of potassium permanganate was injected into the peritoneal cavity of a mouse. This mouse, although quite sick, did not have the characteristic symptoms of paraxanthin-poisoning, and, after a time, entirely recovered.

These and other experiments convinced me that the permanganate is a fairly good antidote for paraxanthin-poisoning in the mouse, and led me to try its use in the case of leukomain-poisoning from which the paraxanthin-solution was obtained. But I must say that my experience thus far does not promise any great things from the use of the drug in this condition.

I believe that in this paper I have touched upon

a field ripe for clinical research, and my only excuse for publishing observations so incomplete is that it is almost impossible for a busy practitioner to find the time to carry to anything like satisfactory completion a work that requires so much time and labor as this one does.

117 BROADWAY.

## TEA-INTOXICATION.

BY JAMES WOOD, M.D.,

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THE intoxicating effects of tea are not appreciated so fully as they should be, either by the indulger in its infusion or by the physician who is later called upon to combat its untoward influence on the system and to give advice in regard to its further continuation. So very little is to be found in our text-books on the subject of tea-poisoning that, unless the facilities have been such as to make a study of it possible, a recognition of the condition is far from likely. That it is a potent factor in causing functional derangements of the gravest character is well known to those who have given its physiologic action serious attention.

Of 1000 consecutive cases applying for general treatment at our largest dispensary, 100, or 10 per cent., were found to be liberal indulgers in tea, and suffering from its deleterious effects, and no one of which came for treatment of the tea-habit, but for various other complaints. They were loath, when apprised of the cause of their illness, to believe that such a harmless household commodity ever produced any bad effects.

Of these 100 cases reported,[1] 20 per cent complained of persistent dizziness, 19 per cent. of indigestion, 45 per cent. of headache, 20 per cent. of despondency, 19 per cent. of palpitation of the heart, and 15 per cent. of insomnia. Truly the foregoing is an array of troublesome symptoms of which any pernicious drug should be proud.

A much more careful and exhaustive study was made of the next twenty-five cases, which furnish us with the following report of symptoms and the percentage of their frequency:

| | Years. |
|---|---|
| Oldest tea-drinker | 76 |
| Youngest tea-drinker | 18 |
| Average age of the twenty-five cases | 34¾ |
| | **Per cent.** |
| Nationality—United States | 60 |
| " Irish | 32 |
| " English | 8 |
| | **Pints.** |
| Amount drunk in 24 hours—largest quantity | 15 |
| " " " smallest " | 1½ |
| " " " average " | 5 |

[1] The American Med.-Surg. Bulletin, Sept. 1, 1894.

SYMPTOMS (*in percentage of frequency*).

| | Per cent. |
|---|---|
| Headache, simple | 80 |
| Facial or capitæ neuralgia | 92 |
| Vertigo | 36 |
| Restlessness | 48 |
| Mental confusion | 48 |
| Hallucinations | 16 |
| "Nightmare" and dreams | 20 |
| Despondency | 44 |
| Anxiety | 52 |
| Excitement | 28 |
| Insomnia | 56 |
| Palpitation of the heart | 76 |
| Nausea | 60 |
| Gastric and intestinal indigestion | 56 |
| Condition of bowels—constipation | 48 |
| " " alternating constipation and diarrhea | 28 |
| " " diarrhea | 8 |
| Sinking sensation in pit of stomach | 52 |
| Anorexia | 52 |
| Muscular tremor | 64 |
| Menses—irregular | 8 |
| " ceased | 20 |
| Pains—in back | 24 |
| " general | 4 |
| " in side | 8 |
| " in head | 4 |
| " in stomach | 4 |
| Anemia | 4 |
| Dyspnea | 24 |
| Rheumatism | 16 |

At first glance there is apparently a great difference in the percentages of the frequency of certain symptoms in the first one-hundred cases and the subsequent twenty-five. The explanation is that the study of the twenty-five cases commenced on July 1st, and during the hot weather people drink more tea than in the colder seasons of the year, hence the higher per cent. of evil symptoms.

That we may better appreciate the power which tea is capable of exerting, a brief outline of its physiologic action on the system would not be out of place, and is as follows: No nervous depression follows its use; the action of the skin is increased while that of the bowels is decreased; it is not narcotic; it is anesthetic hypodermatically; it decreases bodily temperature; it affects the sensory system; is a general excitant of the circulation; it dilates the capillaries of the splenic arcade; it retards digestion; it is mildly diuretic; it causes irregular and feeble cardiac action; it rouses and clears the mind and stimulates the imagination; it is an antidote to alcoholism; it lessens tissue-metamorphosis; it opposes active nutrition; it is astringent; it causes a sinking sensation in the epigastrium.

There is a great difference between physiologic and poisonous effects of a drug on the system. When tea has been used for a considerable period in excess and its detrimental action has been constant, we have well-defined symptoms supervene, a few of which are such as vertigo, mental confusion, sensible palpitation of the heart, restlessness, insomnia,

hallucinations, "nightmare," nausea, neuralgia, anorexia, constipation, prostration, and anxiety, and a peculiar kind of intoxication ending after hours of vigil in a sopor from exhaustion.

What worse line of symptoms could follow the use of a beverage so commonly employed it is hard to imagine, and that many people use it to excess is unquestionable. Many have confessed to an inability to "get through the day" without copious imbibitions of what is, in many cases, a strong decoction. Some drink every twenty-four hours as much as fifteen pints, and some there are who are unable to judge of how much they consume. Whether a confession would be considered a matter of shame, it is hard to say; the general lack of moral tone and the total perverseness are so great. They are nothing more or less than genuine inebriates, and look upon tea as the same agent of support as an alcoholic does upon alcohol. It is high time that physicians should recognize these cases of dipsomania and study a method for their amelioration.

The following cases are reported, necessarily very briefly, as typical tea-inebriates. Such symptoms as are due to other complaints have been abscinded, and great care has been taken to avoid confusion between effects caused by too free tea-drinking and those of other agents.

CASE 33.—Female, was exceedingly nervous and easily startled at every noise; suffered much from insomnia, and when able to get any sleep it was greatly disturbed by terrible "nightmare." During the day her mind was very prone to wander, and she had difficulty in concentrating her attention on her work. Palpitation of the heart was constant. She used the tea for its stimulating action alone, and drank eight pints in twenty-four hours.

CASE 101.—Male, was much excited and sleepless, and after drinking tea was troubled with severe abdominal pains and nausea. The bowels were constipated. He drank, besides three pints of tea, fifteen pints of coffee every day.

This case illustrates the antagonizing effects of coffee when it and tea are drunk together. This is a very common occurrence, and patients seem to be able to drink a great deal of both, with few bad symptoms, except the cerebral stimulating effects and the insomnia.

CASE 148.—Female, twelve years of age. Her bowels were constipated. She was subject to bad attacks of dyspepsia and nervous headache. She had no appetite for general food, and was content with tea and toast. She drank about four pints of strong tea a day.

This is the youngest inebriate that has come under my notice, and in her method of living represents a large number of young women working in our large stores and places of business. The food-value of a meal of tea and toast may be designated as *nil*, and a sure consequence of such living is sickness and days of enforced idleness. To ameliorate such a state of affairs would be of economic value to the working class. In the domain of tea-drinking, at least, this class does not appreciate one's efforts in their behalf.

CASE 228.—Female, suffered greatly from conscious palpitation of the heart, especially at night, and from dyspnea. The pupils were widely dilated; indigestion was troublesome, and also insomnia. She used four pints of tea a day.

CASE 838.—Male, had pains all over the body, insomnia, conscious palpitation of the heart, dizziness, muscular tremor, headache, constipation, and sinking sensation in the epigastrium. He often contemplated suicide. He drank five pints of strong tea a day.

CASE 839.—Female, was very despondent and weak, had no appetite, had occipital cephalalgia, sinking sensation in pit of stomach, and palpitation of the heart. She had a very strong desire to "do away with herself." She depended largely on toast, and drank daily three pints of the strongest decoction of tea she could make.

CASE 966.—Female, aged twenty-five years, has suffered for several months from intestinal catarrh. She is dizzy and complains much of general headache, insomnia, nausea, and muscular twitchings. The usual meal is tea and pie. When she does not have an opportunity of making tea she will eat the dry leaves. She has attempted suicide. She drank ten pints of strong tea a day.

These three cases, Nos. 838, 839, and 966, contain an element of interest. They are the only ones met with so far in our study of tea-drinking which have had suicidal tendencies. They also well illustrate the dietetic perversity already referred to.

CASE 935.—Female, had constant headache, muscular tremor, dyspepsia, and palpitation of the heart. Her sleep was restless and much troubled by dreams. She screamed at night and was very despondent. The menses were irregular and painful. She was anemic, with a most pronounced hemic murmur present. Twitching of the mouth and conscious pulsation of the epigastrium were perceptible. She drank four pints of tea a day.

This case was one of the most obstinate to treat, and for awhile seemed to defy the heretofore efficacious medication. Persistence gave its own reward, and she is now in excellent health.

CASE 1017.—Female, had severe pain in the epigastrium, nausea, constipation, vertigo, pain in the back and side, sinking spells, muscular tremor, very weak eyes, and loss of appetite. She had a constant dread of going to sleep for fear she would never wake up. Her usual amount of tea was nine pints per day.

CASE 1083.—Female, thirty-eight years old, had irregular menses, was very nervous and forgetful,

had distress in the stomach after imbibition of tea, dizziness, despondency, and muscular tremor. She drank six pints, and often more, a day.

CASE 1134.—Female, sixteen years old, gave a history of severe intercostal neuralgia, nausea, indigestion, headache, cramps in the bowels, and diarrhea. She was very nervous, and muscular tremor was marked. She had an hallucination that she was soon to be killed or meet with some bad accident. She has never menstruated. She drinks six pints a day.

This case and Case No. 1017 are illustrative of quite a common hallucination among these people. They are either fearful of impending death or some accident which will leave them crippled or deformed, and often beg piteously for relief.

CASE 1177.—Male, was unable to regulate his bowels for several months, and suffered much from headache, vertigo, mental confusion, palpitation of the heart, insomnia, nausea, muscular trembling, dyspnea, dyspepsia, despondency, and a feeling of vacuity in pit of stomach. He had various delusions. He used about four pints a day.

CASE 1274.—Male, was very nervous, had vertigo, mental confusion, horrible dreams, despondency, anxiety, palpitation of the heart, dyspnea, sinking sensation in the pit of stomach, and constant pain at top of head. He also had hallucinations, but of no constant character; in speaking he became very much excited, and stammered. This soon became so bad that he was unable to talk and had a strong desire to do violence to the one with whom he was speaking. He drank four pints of tea a day.

CASE 1292.—Female, forty-five years old, had some rheumatism in the ankle and slight pain in the side, and was constipated. She drank ten pints of the strongest tea a day.

This case is a noted one on account of the large amount of tea drunk and for the length of time that she has maintained the amount taken. The method of making the infusion which she used was the same as that employed by the others.

These are a few cases selected at random to illustrate the symptoms one is most likely to meet with and their severity in tea-dipsomania.

The method employed in making the infusion of tea by nearly all of the cases which have come under my observation is as follows: An unmeasured quantity of the leaves is thrown into the teapot and an unmeasured quantity of boiling water added. In any time from ten to thirty minutes this infusion is used. In the preparation of the second infusion the new leaves are thrown in with the old, which have been left to soak, and the procedure given is repeated. This continued throughout the twenty-four hours assures, after the first infusion, a decoction heavily loaded with tannin (from 7 to 17 per cent.) and thein, and in fact with all the constituents of the leaf soluble in either hot or cold water. A method more pernicious and sure to give its own reward could hardly be devised That tea is an agent capable of producing the most untoward effects upon the system, our cases fully substantiate.

In reports just received from the lunatic asylums of Ireland the excessive drinking of tea is given a prominent place as an etiologic factor in causing insanity. This fact and the adscititious data of the increase in the amount of tea imported yearly makes a more thorough study of tea-inebriety desirable. There are many economic questions involved which it would be well for scientific sociologists to recognize and place at their proper status. To the physician there is revealed a field for research in mental diseases which promises good results. Nor must the power of tea as a causative factor in disease be lost sight of. The safest advice would be to interdict its use as unquestionably as one would the excessive indulgence in alcohol.

162 ST. JOHN'S PLACE.

## ARE LIGATURE-FISTULÆ AFTER CELIOTOMIES AVOIDABLE?

BY FRANCIS L. HAYNES, M.D.
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TEXT: "Dr. Jones reported the following case: A young woman came into Christ's Hospital with an abscess three inches above the pubes. Why it was there was a puzzle. She had been operated on eighteen months prior for an ovarian tumor by Dr. Reed. The probe passed down behind the pubes for a considerable distance. With the curet this portion of the ligature (shown), which had been put on the stump, was fished up.

"Dr. Reed: The silk is manifestly impure. I have had this same thing to happen to me several times. Generally there is some infection, followed by an abscess or sinus. Sometimes, these ligatures, when once contaminated, will feed a sinus indefinitely."—*Cincinnati Obstetrical Soc.; Journ. Am. Med. Association, June 23, 1894.*

COMMENT: The foregoing text will recall to almost every surgeon one or more similar cases, too many of which may fairly be considered incurable.

Are such failures in technique avoidable? I know of but one certain means to avoid them: to use catgut instead of silk or other unabsorbable material for ligatures which are to remain in the tissues. For intestinal sutures we should still retain silk.

The use of catgut in the abdominal cavity is no longer experimental. Many hundreds of cases carried to a successful termination attest its safety. In my last hundred celiotomies, including nephrectomy, pan-hysterectomy, myomectomy during pregnancy, and extra-uterine pregnancy, I have used catgut exclusively, except for intestinal suture, in which fine silk is used, for hysterorrhaphy and for suturing the abdominal incision, in both of which wormgut is used. All have fully recovered except a case of colotomy for enormous sloughing carcinoma of the rectum and one of ectopic gestation

in which a fetid placenta was removed from the abdominal cavity.

Catgut is a little more difficult to handle than silk, but with a few hours' practice on dogs all difficulties may be readily overcome.

PREPARATION OF CATGUT: It is best to buy the raw material from dealers in silk-mill supplies, as gut must be strong and fresh to be used by manufacturers. The gut is bought in long skeins. The surgeon disinfects his hands, and with strong boiled scissors divides the skein into pieces about twenty-five inches long. The individual pieces are then made into coils and loosely secured by loops, after which they are dropped into a boiled preserving-jar, soaked in Squibb's ether for forty-eight hours, then in ethereal sublimate solution 1 : 200 for forty-eight hours, and finally in absolute alcohol. Just before the operation the surgeon, or his first assistant, with boiled forceps picks from the jar a sufficient number of loops, with which he threads a number of boiled needles, which are arranged in a boiled platter, from which they are picked by the surgeon (not by a nurse) as he needs them. The rule is never to return a piece of catgut to the jar after it has been once removed. It is better to use small storage jars, rather than large; in fact, I take to the operating-room about enough gut for two operations.

Silk and silkworm-gut are boiled for two hours and stored in alcohol. Just before the operation, the needles are threaded and then are basted into a towel and placed in a copper boiler and boiled for half an hour, after which the water is poured off. As needles are needed during the operation, they are picked from the towel by the operator himself, the nurse holding near at hand the boiler containing the towel in which the threaded needles are basted. As the threaded needles are not touched after boiling by anything but the disinfected hands of the operator, it follows that the chances for infection are reduced to a minimum.

SUMMARY: 1. Ligatures and sutures will occasionally produce fistulæ if non-absorbable or slowly absorbable thread is used.

2. Silk is readily sterilized, but is likely to become infected by the hands during the operation, or by the tubal mucosa or other sources or through the drainage-tube after operation.

3. Catgut carefully prepared is in most cases a very satisfactory ligature-material. Should it become infected, it would disappear too soon to produce permanent fistulæ.

4. Operators should pay more attention to the preparation of ligature-thread. After ligatures are sterilized they should not be handled by any one but the operator.

# CLINICAL MEMORANDA.

## A CASE OF EXSTROPHY OF THE BLADDER.[1]

BY H. C. MASLAND, A.M., M.D.,
OF BETHLEHEM, PA.

BECAUSE of its comparative rarity, the following case of exstrophy of the bladder, I think, justifies a report. The following is the history:

Maud M., born August 16, 1893, was the third child of healthy, well-developed parents. The other two children were healthy and well formed. The mother stated that nothing unusual had happened during the period of gestation that might account for the deformity. Labor was easy and natural. When I was called in, about six weeks after birth, the child presented a healthy appearance, with an excessive development of adipose tissue, which is well shown in the appended illustrations.

In the hypogastric region there was found absence of the abdominal walls extending as high as the umbilicus. The anterior half of the bladder was also absent, and the posterior wall presented a red, papillated surface, protruding to a greater or lesser degree, according to the degree of intra-abdominal tension. The line of union of the bladder with the abdominal wall was well defined by a smooth, glossy strip of mucous membrane. At the lower aspect the orifices of the ureters were noted at the summit of little papillæ. The vulvar parts were medianly divided as far down as the anterior wall of the vagina. A very slight groove was present on the superior surface of the vaginal wall, which represented the normal urethra. The pubic symphysis was also absent. The hymen was normal. There was no hernia found on either side. This condition, so frequent in males suffering from this deformity, we would not expect to find as frequent in females, due, of course, to the different anatomic construction.

FIG. 1.

The parts were kept as clean as possible, but some excoriation of the tissues surrounding the bladder unavoidably ensued. This is shown in Fig. 1, which represents the condition prior to the operation.

I advised postponement of operative procedure until the parts had more nearly approached the adult position, as the bladder of the infant extends well into the ab-

[1] Read before the Northampton County Medical Society.

dominal cavity, receding to the pelvic cavity as the child grows older.

The child is less able to bear the strain of the summer months and the teething period with this continual irritation, but statistics show that a good percentage pass these trying periods safely, and considering the fact, too, that operation has never perfectly restored the parts—incontinence of urine persisting, I believed on the whole, that it was better to wait until the child was at least two years old before attempting operative relief. The mother was anxious, however, to have the operation performed, and I acceded to her request.

After all preliminary attention had been given to the bowels and the parts to be operated upon, on March 6, 1894, assisted by Drs. A. R. Wilson and F. H. Erwin, the operation was performed. I considered the method of procedure as advised by Prof. Wood, of London, to be the best adapted to cases of this nature, and it was carried out.

According to this plan, a middle flap was measured on the abdominal wall superior to the bladder. This was separated from the abdominal wall, hanging by its inferior border. A groove of good depth was then made around the border of the bladder to allow thorough coaptation of the flap. Next, the two lateral flaps were outlined and separated from their deeper structures, the pedicle of these also being the inferior border of the flap. All the flaps were cut a little larger than strict measurement, to allow for contraction.

A considerable amount of adipose tissue was included in the flaps, that we might secure a good circulation and better insure the vitality of the parts.

Having dissected the flaps in a satisfactory manner, I proceeded to fit the inverted superior flap into the groove prepared for it. To accomplish this the silk was threaded in two needles and passed in an outward direction, first through the inner edge of the groove, then through the flap, piercing first the dermal surface of the flap, then through the outer edge of the groove, where the two ends were tied. These so-called tongue and groove sutures were repeated till the first flap was completely attached. This was the tedious part of the operation, and occupied some little time.[1]

The two lateral flaps were then twisted at right angles on their pedicles and sutured end-to-end over the first flap. Sutures were also introduced uniting them to the subjacent flap.

The elasticity of the skin, due to the large amount of fat present, rendered it easier to draw together the edges of the wounds made, making it possible to almost completely cover the raw surfaces.

Silk sutures were used in both the buried and superficial stitches.

[1] In connection with this part of the operation I might draw attention to a condition that interested us. In order to prevent the sutures from pulling through the unresisting adipose tissue we found it necessary to leave a small strip of skin tissue on the outer edge of the groove. This was completely covered in by the lateral flaps in a later part of the operation. The question was as to the result that would follow burying this strip of skin by the lateral flap, leaving the skin in contact with the adipose tissue. As far as we can see no harm has resulted. None of the text-books to which I have had access makes any mention of this little point.

It was the original intention to catheterize the ureters. This necessitated the use of catheters of very small caliber, and after watching them awhile and believing there was a damming back of urine, they were discarded, and I used an ordinary rubber tube placed in the vesical cavity. Rubber dam was used to protect the dressings. Notwithstanding the great caution that was taken, we were unable to perfectly protect the lower parts of the flaps from being contaminated with urine. We did not, as a consequence, get complete primary union between the lateral flaps. The parts united, however, without any ill effect. Save the two tongue and groove sutures mentioned later, the other buried sutures were not seen till May 25, when two were passed in the urine.

Chloroform was used in this case, as I believe it preferable in children, when there are none of the special contra-indications to this anesthetic.

The temperature after the operation was 101.4°; the child reacted nicely, during the evening the temperature coming down to 99.6°. At no time subsequently did the temperature reach the initial height.

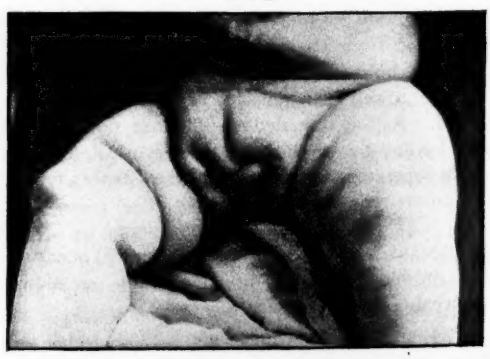
Opium was administered to quiet the child, as, of course, restlessness and crying would increase the abdominal pressure, and so tend to separate the flaps.

For the first ten days the child was kept on a broad splint projecting beyond the head and the feet, and well padded so as to produce a slight flexion of the thighs on the abdomen.

During the second week the child contracted a slight bronchitis, but responded kindly to treatment.

On July 6, four months after operation, I was called to see the patient and found her with a temperature of 101.8° and presenting considerable swelling over the right lateral flap. Fluctuation was detected, and we attributed the condition to an irritating suture. The knot of this suture was expelled on July 7th along with a considerable quantity of pus. The parts quickly healed, and have given no further trouble. Fig. 2 shows very well the parts as they appear at the present time.

FIG. 2.



The child was not weighed before and after the operation, but it did not apparently lose flesh. Owing to the pulling out of a tongue and groove suture on either side, attributed to some unavoidable restlessness, the parts separated somewhat, leaving an opening at the present time capable of admitting the end of the finger.

In conclusion, I might say I expect at some future

time to endeavor to find the ends of the sphincter vesicæ and unite them, at the same time endeavoring to form a normal urethra. Ashhurst states that this has not yet been accomplished so as to give control of the bladder. I am not sanguine as to the result, but no harm can be done, and the attempt is well worth making.

In regard to the statistics concerning this condition, Prof. Ashhurst informs me that, including this case, he has collected 115 cases, with 87 recoveries, 6 failures, and 22 deaths—a mortality of 19 per cent. As far as I can learn, this is the youngest case that has been operated upon for this interesting condition. The child was six months and eighteen days old at the time of operation.

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## CONTUSION OF THE ABDOMEN, WITH RUPTURE OF THE THORACIC DUCT.

BY THOMAS H. MANLEY, M.D.,
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SERIOUS abdominal contusions always constitute an interesting class of cases, and the one here presented was, from several standpoints, of a unique and unusual character. I can find no parallel case in the annals of American surgery, nor in the older foreign works any one possessing all the features of this.

It has been a debatable point whether, in visceral, central disorganization from contusive violence, the viscera suffer by *contre coup*, or whether the injury results from force coming from before, the structure being crushed between it and the resisting spinal column behind. In this instance the quality of force was dual; almost simultaneously both contusive and compressive. The case was a typical one, too, as illustrating the obscure symptomatology which, as a rule, attends abdominal contusions in their early stages. Clinical phenomena in their usual order succeeded in this case which are witnessed in all grave abdominal injuries. But, notwithstanding the extent of injury, recovery has been complete, and no evidence exists that any structural changes remain that in any way diminish bodily strength.

In all serious abdominal injuries of a contusive or compressive character, one of three things must necessarily happen: (*a*) hemorrhage; (*b*) laceration of a fixed, solid organ; (*c*) rupture of some part of the alimentary canal or of some of the tubular structures within the abdomen. But as the patient is invariably in a condition of shock of a severe degree, it may be quite impossible immediately after injury to make a correct diagnosis for the purpose of guiding us in a rational therapy or in forecasting prognosis. This was the condition in the following case; it was only after several days that I was able to determine what organs were injured and what escaped.

The patient, a man, thirty-five years old, of medium height and spare build, was admitted to Harlem Hospital, July 3, 1893. On the morning of that day, about one hour after he had eaten a hearty breakfast, while crossing a street, he was struck with great force over the epigastrium by the pole of a brewery-wagon and knocked down on his back. Before the driver could stop his horses the front wheel passed over the center of the abdomen. An ambulance was called, and the injured man was immediately admitted to the hospital. At this time he was in a state of great shock. Hypodermatic injections of brandy and strychnin were administered and artificial heat applied. The man complained of intense pain in the abdomen on the slightest motion. There were no marks of injury on the integument, except on the right side near the crest of the ilium, where a slight erosion of the integument was discovered. The pulse was 70, the temperature 98°, and the respirations 20.

As reaction set in, the abdomen commenced to distend and everywhere was exquisitely sensitive. On the day after admission the patient complained of pain in the hypogastrium and required catheterization. Except for a slight tinge of blood in the urine its analysis was negative. There was no vomiting. Opium was freely given, and hot stupes applied locally. On the third day (July 5th) peritonitis with entero-paresis was unmistakable. The eyes were sunken, the nose pinched, and the lips and ears cool and blanched. The man was in great mental distress and constant suffering, which it required large doses of opium to assuage. He was nourished altogether by enemata, and was allowed bits of ice to suck to relieve thirst, which now was excessive. The abdomen was hard, sensitive, and flattened, the knees extremely flexed to relieve muscular tension. The temperature on this date was 100.4°, the pulse 86, and the respirations 32. On July 8th and 9th the patient was about the same, except that he was becoming somewhat weaker. On July 10th the symptoms commenced to ameliorate; the abdomen was less tender, and he began to demand food. The pulse was 80, the temperature 100°, and the respirations 21.

At this time, on the right side, over the right iliac fossa, low down over the course of Poupart's ligament, there was a distinct bulging forward of the abdominal wall; this enlarged and diminished in volume, according to the position which the body took, being much the largest when the patient lay on the right side.

It was well defined, and transmitted a distinct fluctuating sensation on pressure. The surface of the integument over it was not reddened, and not hotter than elsewhere. On percussion, it was evident that whatever its nature, it had pressed the intestinal coils away from it; for it everywhere emitted a dull sound. It was nowhere sensitive, and on firm pressure could be made to quickly disappear. From its general character it was supposed that it was a hematoma. To definitely determine the question, an exploratory needle was introduced and the syringe filled. It was found that the collection was a fluid of a milky color and consistence. An incision was now made into the tumor, when a little more than sixteen ounces of a lactiferous fluid was discharged and secured as it came through the incision. The tumor was lodged immediately behind the peritoneum, over the sheath of the muscles. A drainage-tube was passed into the opening, its free end being engaged in a perforated cork in a pint-bottle. In the next twenty-four hours eight ounces of the same fluid were collected through the tube, but a large quantity had made its way out beside the tube and saturated everything in near contact. In the next four days the daily quantity collected averaged from five to six ounces. In the meantime, there was much that made its way out into the

clothing. It continued to drop, more or less, for ten days, when it finally ceased. All the time that this discharge took place the appetite was good, but the man became steadily weaker until the discharge ceased. He constantly complained of a feeling of emptiness in the stomach, and, particularly during the night, he clamored for food. On the fifteenth day the wound had healed and he was up.

A careful microscopic and chemic examination was made of the specimens of fluid evacuated at various times on the same day and on successive days, and was demonstrated to consist of pure chyle. The color was a bluish-white, very much like that of woman's milk. Its taste was slightly salty. Its odor was feeble, giving off an aroma very much like that from fresh, warm milk. Its specific gravity varied from 10.10 to 10.19; under the microscope it was found to contain an abundance of characteristic lymph-corpuscles, granules of fat, broken-down endothelium, and flakes of an ill-defined substance, probably coagulated protoplasm. On some days its specific gravity was less than on others, and it was always noted that it flowed most abundantly after eating. The man left the hospital August 31st, quite restored to health.

As this accident must have produced ulceration of some part of the chylous system within the abdomen, it is interesting to speculate on its *modus operandi* and where the brunt of force was sustained. I believe that it was the reservoir of the chyle which was ruptured while distended early after breakfast. The viscus is lodged behind the peritoneum, resting on the body of the second lumbar vertebra. It was violently crushed by the wagon-pole against the bony wall of the spine. The fluid, in response to gravitation, the same as in hemorrhage, gravitated into the flank, making its way around through the loose retro-peritoneal tissues, following the course of the psoas muscle over the iliac fascia till its further descent was arrested at the crural arch.

It certainly does seem extraordinary that a structure so well protected as the thoracic duct can sustain damage, while overlying, more exposed parts escape. This is difficult to explain; but, that it does occur is beyond question, as, for instance, when the aorta is torn open, or the deeply protected ureters, and various vessels in the abdominal viscera. A case of rupture of the common bile-duct with an enormous leakage into the peritoneal cavity was under my care three years ago which conclusively proved this. The young man had been run over by a heavily laden wagon. Shortly after (three days) he was tapped, when two gallons of bile were removed. On autopsy, a laceration four centimeters below the cystic conduit was discovered. None of the overlying organs was damaged.

The obscurity of diagnosis here was an interesting feature, and in this instance it is evident that an exploratory celiotomy would have accomplished no good, but on the contrary, would probably have very much diminished the patient's chances of recovery.

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***The Alvarenga Prize of the College of Physicians of Philadelphia, for 1894***, has been awarded to Dr. G. E. De Schweinitz, for an essay entitled "The Toxic Amblyopias: their Pathology and Treatment."

## *SUPPURATIVE SACRO-ILIAC DISEASE DUE TO INDIRECT VIOLENCE, WITH NERVOUS SYMPTOMS.*

BY A. H. P. LEUF, M.D.,
OF PHILADELPHIA.

THE following case is of interest in being a deviation from the rule. Ordinarily if the body has momentum from locomotion, and the lower extremities are suddenly arrested, there is likely to result a strain of the ligaments of the ankle or knee, or a dislocation of the ankle, or a fracture of the lower end of the leg. In the subjoined case, however, although the conditions named existed, the result was very different from what was to have been expected.

On February 28, 1891, I was requested by her legal adviser to see a lady with a view to determining her existing status, resulting from an injury due to negligence on the part of the city authorities, against whom she had entered suit for damages. I found a widowed lady of education, culture, and refinement, fifty years of age, American by birth, and rather stout. While out on the evening of June 22, 1890, mailing a letter, and as she stepped upon the sidewalk from the street-crossing, her left foot, instead of landing upon solid ground, passed down into a hole from twelve to fifteen inches deep, and large enough to readily admit the foot. She fell forward upon her hands. With a little aid she limped back to her home, only a short block away. At the time of the fall she experienced a "sudden, sharp, deep, burning pain" in the left hip and in the region of the back of the left sacro-iliac joint. Until August 20th of the same year she had almost constant pain, with occasional remissions lasting from half a day to two days at a time. During this period she used the common "liniments" and "pain-relievers" advertised by manufacturers and the simple remedies generally depended upon under similar circumstances. On August 20th, however, the pain became so severe that she took to bed. The pain was aggravated by motion. No other parts were affected, except the left knee and ankle to a slight extent. The woman remained in bed three weeks under homeopathic treatment, suffering pain all the time. She continued under the same medical care for fourteen weeks longer. During the first three weeks in bed she had "beating, throbbing pain, at times like labor-pains," at the site of the left sacro-iliac joint posteriorly. A hard ridge crossed the line of this articulation; it was three-and-one-half inches in length, with a depressed spot in the center, the size of a half-dime. During these three weeks this ridge, and especially the spot, were excruciatingly tender. The woman became rapidly emaciated, until she was "very thin." It was only in the middle of January, 1891, that she began to get around alone, with the aid of a cane.

When I called, she still had pain, at times severe and at others not. That in the knee and ankle continued from the beginning to the present, recurring every few days. Walking caused pain to appear, if absent during rest, and increased it if it already existed. To sit steadily, or to maintain any fixed position for ten or fifteen minutes, caused pain that constantly increased if her position was not changed. The pain was deep-seated. The woman complained of a very uncomfortable surface-

numbness at the lower end of the spine and back of the left hip. When she first sat up she had perfect numbness of both lower limbs and the buttocks. She could not use either leg for a long time while in bed, nor for a time after she began getting up. There was marked hyperesthesia of the left leg for eight weeks from August 20, 1890. Simply touching the skin would at times elicit screams. For seven weeks she was obliged to sleep upon her abdomen. After the three weeks in bed she could only leave the bed by being carefully lifted out, and then the most delicate handling caused excruciating pain. She was as helpless as a child.

About the third day in bed she developed a very free vaginal discharge, lasting more than three weeks. "The discharge was thick, greenish-yellow, and very offensive, the odor so penetrating as to make the room almost unbearable." She said "toothache is heaven to the pain I suffered that time."

During the December holidays she dismissed the homeopath and secured the services of a regular physician. The diagnosis of the former had been typhoid fever; that of the latter rheumatism, or at least a chronic congestion of the fibrous structures of the hip and vicinity, possibly caused by the injury. She improved rapidly during January and February, so that when I saw her she had regained her former weight, looked well, and could walk alone with care and effort. Some of her trouble in getting about was undoubtedly mental.

After a careful consideration of her history I concluded as follows: The sudden arrest of her foot while walking, and its fixation in the hole in the ground, against the edge of which her leg was fixed, as evidenced by a deep abrasion and subsequent scar, caused the momentum of her trunk, head and arms to continue these forward. While her foot was wedged in the bottom of the hole the leg at the junction of its middle and upper thirds pressed against the edge. The greatest strain was at the point of contact with the edge of the opening, but the contact being so high up on the leg prevented a fracture, for the double reason that at this point the tibia is much stronger than at its lower end, and because the leverage was less—*i. e.*, there was greater resistance and less power. At the moment of strain the knee was promptly fixed by its musculature, and so was the hip. The least protected parts were the two sacro-iliac joints, which have very little muscular protection, this being almost entirely fibrous. The keystone character of the sacrum in the posterior pelvic arch, with the forward tilting of its superincumbent weight and added momentum, the force of which this bone was so suddenly called upon to arrest, proved too much for its unsupported ligaments and its spongy tissue. The strain was sufficient to wrench or crush the cartilaginous face of the joint, and perhaps to tear the attachment of the fibers passing into the bone at the back of the articulation.

Had this condition been recognized at once, had counter-irritation, or local depletion by leeches been applied, and had absolute rest been steadily enforced until a day or two after subsidence of all pain, I believe that the woman would have made a complete and uneventful recovery. But the condition was not even suspected. The parts were compelled to do their work while attempting repair. The conditions were too severe; congestion increased, inflammation supervened, there was necrosis of cartilage, accompanied and followed by suppuration. The effort at repair while the joint was taxed with its normal work was marked by the two months after the injury, during which the patient kept about, but when destruction had fully set in she took to bed. The tension of the accumulating pus confined within the narrow limits of the sacro-iliac joint, with bony walls on each side, and ligamentous bands all around, was so great as to cause pain almost unbearable. Extension was in the direction of least resistance, which was anteriorly, though progress had been made behind, as evidenced by the tender, bulging ridge. Its anterior progress irritated the sacral plexus, causing hyperesthesia over its area of distribution, and subsequently, through pressure upon this plexus, paralysis and numbness of both lower limbs occurred, especially of the left, that of the right probably being largely reflex or sympathetic.

The possibility of extension of the pus through the auricular surface of the sacrum into the sacral canal, and thence upon the roots of the sacral plexus of each side, must not be overlooked. The slow and gradual mode of improvement is most readily accounted for on this supposition. Of course, evidence either way concerning this possibility was no longer available with any certainty when I saw her. No history had been kept by either attendant.

Eventually the abscess discharged into the vagina. The pus was characteristically greenish and horribly and penetratingly fetid. The discharge continued until the recuperative powers of the patient had completed the repair. As this progressed the symptoms waned, the patient felt better, her appetite returned, her nutrition improved, and she became convalescent. Tenderness of the parts naturally remained for awhile, as is the rule, but it gradually wore away.

If correct in my supposition, verification should be certain and easy through the vagina. An examination was, therefore, made with her attending physician. A small nodular scar, about one-quarter inch in diameter, was found in the upper end of the vagina, on the patient's left side. It was very markedly drawn directly toward the left sacro-iliac joint by a cylindrical band of scar-tissue.

I may also add that there were no local spinal symptoms indicating disease of the cord.

The case went to trial, and the woman recovered damages.

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## AMPUTATION AT THE HIP-JOINT BY WYETH'S METHOD.

BY ROBERT T. MORRIS, M.D.,
OF HOUSTON, TEXAS.

SOME months ago, while an interne in the Charity Hospital, New Orleans, through the courtesy of Drs. Souchon and Matas, I performed a disarticulation at the hip-joint by the Wyeth method.

The history of this operation and the statistics to sustain it, and its advantages over allied operations have been so completely investigated and reported by Wyeth, Lanphear, Parham, and others, that it would be superfluous to attempt to make any additions. Suffice it to say that the mortality in civil practice has been reduced

from 64.1 per cent. to about 22 per cent. by this method, and that the two great sources of danger—shock and hemorrhage—have been materially diminished; in fact when the needles and tourniquet have been properly applied the hemorrhage is under complete control.

The case which I operated upon is as follows:

J. B., aged nineteen years, entered the Charity Hospital, March 16, 1894. His brothers and sisters are all healthy, and he is without tuberculous or syphilitic history. He had spent all of his life in the country on a farm. About December 3, 1893, while at work, he was hit on the external condyle of the femur with a "dolley," the blow producing considerable pain and incapacitating him for work for several days. About one month later a horse fell upon the same limb, injuring it to such an extent that he was compelled to use a crutch while walking. A tumor appeared soon after the last accident, and increased rapidly in size.

The patient is a tall negro, slightly narrow-chested, and of a cachectic appearance. His evening temperature registered between 99° and 100°. An examination disclosed a large spindle-shaped tumor, involving the thigh and leg of the right side, the greatest circumference of which, twenty-seven inches, was at the lower third of the shaft of the femur. The upper visual limit of the growth was about five inches below the anterior inferior spine of the ilium, the lower about four inches below the lower border of the patella. By aspiration a small quantity of dark, sanious fluid was removed from the joint-cavity. The inguinal glands were enlarged.

After explaining to the patient the gravity of the operation and the necessity of removing the focus of infection, he submitted to treatment.

The night previous to and the morning of the operation ten minims of the tincture of digitalis were administered. Chloroform was the anesthetic used. Mattress-needles were used to support the tourniquet. On April 3, 1894, the limb was disarticulated, observing closely the directions given in Wyeth's article in THE MEDICAL NEWS of December 9, 1893. After the limb had been elevated and an Esmarch bandage applied, the needles were inserted. While making the skin-incision it was noticed that the limb was not completely exsanguinated, and the tourniquet was retightened, after which no bleeding resulted.

The ideal flap was made; the circular muscular incision was on a level with the trochanter minor; the limb was then disarticulated and the vessels ligated.

The condition of the patient after the operation was satisfactory; shock was slight, and the man soon reacted. The day after the operation the temperature ran up to 101°, and continued above normal until his death, eleven days later. Six days after the operation nausea and vomiting supervened, which were the forerunners of peritonitis of a tuberculous nature.

The *autopsy* showed tuberculous enlargement of the internal iliac, lumbar, and mesenteric glands. There was also a tuberculous peritonitis.

It will be noticed that there were a few variations from Wyeth's original operation. It is recommended to remove the soft parts some inches below the muscular incision to facilitate the search for the vessels. This seems to be a needless complication, and unnecessarily prolongs the operation, and in consequence aggravates the shock. If the tourniquet is properly applied and supported there is no danger of disarticulating previously to the ligation. This, of course, pre-supposes the application of the needles sufficiently high to permit of disarticulation without their removal. Murdoch's suggestion of leaving the limb intact to use as a lever in disarticulating was utilized.

I think an observance of these modifications would remove the only serious objection to the operation—that the delay by this method and the double operation, amputation and disarticulation, greatly increase the shock.

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## A CASE OF SUBDURAL HEMORRHAGE.

BY J. SHELTON HORSLEY, M.D.,
OF STAUNTON, VA.

A. B., colored, about forty-three years of age, was a man who had not for some time enjoyed good health. About twenty years ago he contracted syphilis, which continued to trouble him to the time of his death. He had also been a very hard drinker, from which habit he was never completely free. He was not, however, subject to epileptic seizures or troubled in any way with cerebral symptoms so far as the knowledge of his physician extends.

On the afternoon of August 6, 1894, while sitting in a wagon, which was being driven slowly, he said the "hand he was holding on with slipped," and he fell, striking the left parietal eminence against the edge of the curbing. The wound inflicted was slight, being about one-and-a-half inches in length and not extending to the bone. He got up and seemed to have a slight convulsion of the left arm. Dr. Catlett was sent for, and after giving the wound proper attention he had the man sent home, a few blocks distant. The man was perfectly conscious at this time (4.30 P. M.), and as he complained of being nervous, Dr. Catlett gave him ammonium bromid. At 5 o'clock the Doctor was again sent for, and found the patient conscious, but having general convulsions. He then gave him a hypodermatic injection of morphin and atropin, which seemed to afford relief, and the spasm was then confined to his left arm.

At 6.30 P.M. the man was completely unconscious, his pulse full and rather slow. His respirations were stertorous, his body covered with sweat, and the temperature slightly elevated. At 10.30 of the same morning I saw the patient in consultation with Dr. Catlett. His condition was much worse; the respirations were shallow, difficult, and stertorous; the abdomen was very tympanitic; the pupils slightly dilated; the pulse about 125 per minute and weak. The spasm was confined to the left arm, the rest of the body being quiet, and consisted in eight or ten rapid partial flexions and extensions of the forearm upon the arm, the wrist and fingers not being involved. This happened every two or three minutes. The head was turned to the left side, and the eyes were also rotated in the same direction.

We thought of operating then. Weisemann's series of 257 cases of intra-cranial hemorrhage, 147 of which were treated expectantly, 131 dying; while of 110 operated on, only thirty died, would alone establish the justification of operating in cases of this kind, even in the most desperate conditions. However, the surroundings, which

were filthy, and many adverse circumstances deterred us so we gave a hypodermatic injection of ergotin, and left, feeling certain that the issue must shortly be fatal. The man died at 12.30 A. M., eight hours after receiving the injury.

The case being a peculiar one, we held an autopsy and procured the brain. The bone beneath the scalp-wound was sound and apparently uninjured, but had a slightly reddish tinge. The dura and the brain beneath presented nothing peculiar, but all the cortical blood-vessels were injected and engorged throughout the entire surface. We took out the brain and found an irregularly shaped clot on the outer surface of the right temporo-sphenoidal lobe, which proceeded apparently from the artery between the inferior and middle temporo-sphenoidal convolutions. This clot covered a portion of the outer surfaces of the three temporo-sphenoidal convolutions, the middle and inferior being chiefly affected. It was about two inches at its broadest diameter, an inch at its narrowest, and not more than one-sixth of an inch deep at its thickest point.

Feeling that there must be some other lesion to account for the arm-symptoms, we examined further and found a small clot just below the margin on the anterior portion of the inner surface of the upper end of the ascending frontal convolution. Further dissection revealed nothing of interest.

Among the points worthy of note are: 1. The main clot was found about diametrically opposite to the seat of the external injury, where the force-waves met. 2. There was another small clot nearer the original wound, which alone could account for the arm-symptoms. 3. Rapid death, hastened, I suppose, by a debilitated constitution, as the lesions found did not seem to be sufficient to cause death in a healthy individual, in such a short time. 4. The walls of all the bloodvessels seemed degenerated, the result, most probably, of syphilis and alcohol. I feel confident that if they had been normal, no such hemorrhage would have occurred.

## MEDICAL PROGRESS.

***Castration for Rupture of the Vas Deferens.***—CARLESS (*Lancet*, No. 3708, p. 687) has reported the case of a strong, healthy-looking man, about forty-seven years old, who while lifting a piano was crushed, the whole weight of the instrument falling upon the patient, who at once felt a severe pain in the left side of the scrotum and in the left testicle, which became swollen and tender. No special notice was taken of this, as the pain passed away, but on attempting intercourse with his wife a few days later the most severe pain was again experienced in the testicle, which also became enlarged, and blood was found to have passed per urethram. On examination, the epididymis was observed to be large and tender, the swelling being most marked in the neighborhood of the globus minor, the testicle itself being of normal size and shape. Sexual intercourse was then omitted for some months, and at the end of that time, when attempted, was accompanied by great and sickening pain, with enlargement of the testicle. The patient was lost sight of for three years, remaining in the same condition. At the end of this time examination disclosed a chronic thickening of the epididymis, the testicle being still of normal size and consistence. There was also a definite varicocele, and a good deal of dragging pain was experienced. Sexual connection had been but little attempted during the interval, but was still excessively painful. Evidently the case was one of rupture of the vas deferens and castration was recommended. After the lapse of three months the left testicle was removed through an incision over the situation of the spermatic cord and not encroaching on the scrotum. The operation was a very simple one, as no adhesions existed, the cord being tied with silk in several pieces and divided close to the external abdominal ring. The wound healed by first intention in eight days, and the patient left the hospital in twelve days.

***Vasomotor Rhinitis of Malarial Origin.***—CHAPPELL (*New York Medical Journal*, No. 826, p. 403) has reported the case of a girl, eighteen years old, who was awakened early one morning by a chilly sensation, followed in half an hour by violent sneezing and a copious watery discharge from the nose. In the course of three hours the attack began to subside, and disappeared completely in three hours more. Later in the day considerable languor and drowsiness were experienced. On the following morning the attack was repeated at the same hour, and the symptoms recurred thus daily for a week. Various local remedies and internal medication were employed, with no relief until quinin was given. Three other cases of similar character are reported—one in a male of fifty, the second in a female of thirty-one, and the third in a female of forty-two. Ten others of a similar character have been observed, and it is believed that many such cases escape accurate diagnosis. In some of the patients the symptoms yielded to the administration of quinin, while in others they were favorably modified.

***A Case of Traumatic Diphtheria with the Demonstration of Diphtheria-Bacilli.***—ABEL (*Deut. med. Woch.*, 1894, No. 26, p. 548; *Centralbl. f. Bakteriol. u. Parasit.*, Bd. xvi, Nos. 10, 11, p. 455) has reported the case of a girl suffering with an attack of faucial diphtheria, in which, on the tenth day of the disease, a croupous deposit formed on a small wound on the ring-finger of the left hand, in which diphtheria-bacilli were found in pure culture. The wound healed in the course of twelve days under treatment by local applications of an iron solution. The diphtheria-bacilli, both from the wound as well as those obtained from the membrane in the pharynx, proved feebly virulent for guinea-pigs. The case demonstrates, in so far as experiment can, that diphtheria-bacilli alone, without the aid of other microörganisms, may infect wounds and give rise to the formation of false membrane.

***Triple Births.***—MIRABEAU (*Ueber Drillingsgeburten*, München, 1894; *St. Petersburger med. Woch.*, 1894, No. 36, p. 329) has found that triple births are most common (1 to 6500) in multiparous women between thirty and thirty-four years of age, the pregnancy being usually preceded by a long interval of sterility. Women who bear triplets usually come of families in which plural pregnancies are hereditary. Uterus duplex is believed to be a predisposing factor. The more fertile a community—that is, the larger the number of multiparous

women, the more common are triple births. In Russia the number of these is 1:4054; in Sweden, 1:4400: in England, 1:4600; in Germany, 1:7129; in France, 1:8256.

***The Prevention of Recurrence of Volvulus.***—On the hypothesis that volvulus of the sigmoid flexure of the colon is due to a shrinking of the mesocolon at its parietal attachment, which brings the arms of the S more nearly together, and which then, filled with scybala, swing to and fro, until finally torsion results, ROUX (*Centralbl. f. Chirurgie*, No. 37) recommends fixing of the mesocolon to the abdominal wall, in order to hinder the excursions of this long-pedicled, offending loop, and thus prevent the recurrence of torsion. After releasing the volvulus he fixes the entire mesocolon laterally to the parietal peritoneum by means of a continuous catgut suture extending nearly to the linea alba.

## THERAPEUTIC NOTES.

***For Pulmonary Tuberculosis.***—S. SOLIS-COHEN (*Philadelphia Polyclinic*, vol. iii, No. 28, p. 276 and No. 39, p. 386) recommends the following formula in cases of pulmonary tuberculosis presenting evidences of breaking down of tissue, or in which signs or symptoms of catarrhal processes in any portion of the air-passages are present, or in which there is continuous elevation of temperature or intermittent or remittent fever, exceeding 99.5 F.°:

℞.—Creosoti (beechwood) . . . ♏xxx–lxxx.
Tinct. cardamomi . . . f℥iv.
Glycerini . . . . . f℥ij.
Alcoholis . . . q. s. ad. f℥iv.—M.

S.—Two teaspoonfuls in water after meals.

Note.—To the glycerin add the creosote, then the tincture of cardamom and alcohol. The smaller dose of creosote is used at first, and the quantity gradually increased until five drops, four times a day, is reached as a maximum.

In certain cases of pulmonary tuberculosis, in which it is desired to act upon the heart in order to improve the pulmonary and general circulation and to stimulate the bronchial mucous membrane and respiratory tract in general, the following combination will prove useful:

℞.—Benzoyl guaiacol . . . . ℥j.
Powder of digitalis . . . gr. iij.
Eucalyptol . . . . . ♏xxiv.
Extract of gentian . . . q. s.—M.

Make twelve capsules.

S.—One capsule four times a day.

The following formula is of much benefit as a tonic nutrient in the early stages of pulmonary tuberculosis in anemic and scrofulous subjects, and in the prevention of the development of tuberculosis in predisposed persons worn out by nursing relatives in the last stage of this disease or otherwise run down in health.

℞.—Tincture of ferric chlorid . . f℥ij.
Dilute phosphoric acid . . . f℥iij.
Churchill's syrup of the hypophosphites . . . . . q. s. f℥iij.—M.

S.—Two teaspoonfuls in a tablespoonful of water, after meals, thrice daily.

If softening have already taken place a few drops of creosote may be added to the dose. Inhalations of compressed air and systematic over-feeding must likewise be employed if it is desired to bring about a recovery.

***Intravenous Injections of Mercuric Chlorid in the Treatment of Venous Septic Infection in the Puerperal State.***—KÉZMÁRSKY (*Centralbl. f. Gynäk.*, No. 38, p. 906) has reported the case of a quintipara who came under observation nine-and-a-half hours after the onset of labor. A deeply asphyxiated child was born that lived but a few minutes. On the third day the puerpera became feverish and had a chill, with pronounced elevation of temperature; this was followed by repeated chills on subsequent days. Examination revealed nothing other than transient sensitiveness and a sense of doughy resistance in the right vaginal vault. The condition was ascribed to a pyemic process in consequence of venous septic infection. On the eighteenth day gr. ½ of mercuric chlorid was injected subcutaneously, and the injection was repeated on each of the following twenty-six days. This treatment was without influence upon the course of the illness. The patient finally died on the forty-fourth day in consequence of the rupture of a gangrenous metastatic abscess into the pleural cavity. Two other cases of similar kind coming under observation, the treatment was modified by introducing the mercurial directly into the venous circulation, the amount injected being gradually increased from gr. $\frac{1}{80}$ to gr. $\frac{1}{12}$, and the injection being made into a vein of the arm. One patient received ten injections of a total of gr. ½, between the sixteenth and the twenty-fifth days; and the second, eight injections of nearly the same amount. Within two or three days of the institution of the treatment striking improvement had taken place. The temperature progressively declined and the general condition became more satisfactory. Both cases went on to ultimate recovery.

***In the Treatment of Oxyuris,*** NICHOLSON (*Rev. des Maladies de l'Enfance*, June, 1894; *Journal de Med. de Paris*, No. 40, vol. vi, p. 482) has obtained excellent results from the employment of santonin and quassia. Santonin is administered every two days in medicinal doses for a period of a week, and at night a suppository consisting of extract of quassia, 1 to 3 grs. and cocoa-butter sufficient to make a suppository, is introduced into the bowel. It is well, besides, to apply about the anus, morning and night, an ointment containing a small amount of calomel, as well as a little extract of quassia. An enema of the following composition, repeated from time to time, is also serviceable:

℞.—Menthol . . . . . gr. j.
Olive-oil . . . . . f℥j.

The finger-nails of the child ought to be cut short and the extremities of its fingers frequently immersed in an infusion of quassia in order to avoid auto-infection. Constipation is to be overcome by the use of calomel.

***For Eczema.***—

℞.—Acidi salicylici . . . . ℥j.
Zinci oxidi . . . . . ℥iij.
Adipis lanæ hydrosi . . . ℥j.—M.

Fiat unguentum.

S.—To be applied daily.

*Provincial Medical Journal.*

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SATURDAY, NOVEMBER 3, 1894.


## A NOTEWORTHY BOOK.

THE translation into English of a Continental treatise on insanity is something of an event. After the translation of GRIESINGER, now almost thirty years ago, if we except the almost unknown rendition of SCHRŒDER VAN DER KOLK, there had been no occasion to note such an enterprise until the appearance of KIRCHOFF'S work in English a short time since. Hence as an enterprise it must be regarded as both laudable and not without risk. This is so because of the remarkable indifference with which, as it thus appears, English-speaking alienists have all along regarded the productions of French and German psychiatry. In this respect they have not kept pace with the other specialists. Whilst in all departments of the medical sciences contributions have been levied by translators upon the rich literature of the Continent, in mental science we have had for all these years only ESQUIROL from the French, in 1845, and GRIESINGER, from the German, in 1867.

The causes for this lack of literary enterprise are not to be found in any superior culture of American and English alienists which presupposes an intimate acquaintance with these foreign languages. Far from this, in America at least, the proportion among asylum-physicians who speak or read these tongues is small. The true cause must be a lack of interest in, a recluse indifference to, the masterpieces of European psychiatry. The tendency has been toward a narrow culture, if culture it can be called, which has consisted in turning over and over again the ideas which mainly were borrowed unconsciously from ESQUIROL two generations ago. As a consequence, until the recent rise of a pathologic school, represented by LEWIS, English psychiatry has been insular, and American psychiatry has been and still is provincial. Neither is the specialty in America relieved from this reproach by the fact that some authors freshly returned from Germany have occasionally fulminated Teutonized ideas under a thin guise of originality. It has been the voice of JACOB, but the hand of ESAU.

We have now to note and to commend the appearance of a translation of a modern French treatise on insanity.[1] It comes in good time to remind American readers of the famous country of PINEL and to let them not forget the debt which modern mental science owes to the long list of illustrious French writers who have molded and embellished it. There has been, in truth, some danger of such forgetfulness. The current in these later days has set toward Germany, and while we would not disparage the benefits derived from the Teutonic *cult*, we recall that PINEL had already established the moral and ESQUIROL the intellectual treatment of insanity, while Germany had as yet little more than the mystic tenets of the psychologic school of STAHL, of IDELER, and of HEINROTH. These latter were still teaching that insanity was only the perversion of the moral tendencies of the soul, produced by sin; that it had its source in the absence of morality, and that its best prevention and cure were to be found in the dogmas of religion, while already BAYLE, GEORGET, FOVILLE, and CALMEIL, at Charenton, were observing the symptoms and lesions of general paralysis, and, at the Salpêtrière, TRELAT was describing reasoning mania, VOISIN was studying idiocy, FALRET was correcting the errors of the partisans of monomania, and MOREL was preparing for his

[1] A Practical Manual of Mental Medicine, by Dr. E. Régis, formerly chief of Clinique of Mental Diseases, Faculty of Medicine, Paris, etc. With a preface by M. Benjamin Ball, Clinical Professor of Mental Diseases, Faculty of Medicine, Paris. 2d edition. Authorized translation by H. M. Bannister, A.M., M.D., etc. With introduction by the author. Utica, N. Y., 1894.

memoirs on degenerations, hereditary insanity and the etiologic classification.

DR. BANNISTER'S translation of RÉGIS' treatise ought to have a cordial welcome in America. The book reflects the best of the modern French school, and will infuse a distinctly new element into the studies and practice of the day. While not without some literary faults, the translation presents us with a noteworthy book both because of the conditions already stated and also because of many inherent qualities in the work itself.

The quality of a treatise on insanity is perhaps nowhere better shown than in the chapter on classification. This is likely to present the whole subject in epitome, because a wise author does not begin to classify until he has mastered the elements of his science. Hence he shows his defects on the one hand and his mastery on the other when he begins to marshal his morbid entities for classification. He exhibits then his mental grasp, and, what is more to the point, his knowledge. Judged by this standard, M. RÉGIS' book is one of marked originality and precision of thought. This chapter alone will be a contribution of inestimable value to the American alienist both for its clear philosophic method and for the fulness of its subject matter. It is obviously impossible to analyze this classification in this short space, but we may characterize it in brief as remarkably free from the *à priori* considerations which mar the scheme of KRAFFT-EBING —the best of the German school. This is shown especially by the skill with which it leaves space for new varieties, by its flexibility and adjustability and by its close adherence to clinical details. It takes progressive systematized insanity, for instance, out of the list of the degenerated types, for this disease, as MAGNAN has clearly shown, is not essentially an hereditary one in all cases; and it leaves an option for placing the periodic so-called psychoses, such as recurrent mania and circular insanity, among the hereditary or constitutional types, where they indubitably belong.

The mechanism of this notable book is not the least admirable thing about it. In his introduction to this translation, the author, with pardonable pride, points out the fact that this is "assuredly the first instance of a work treating of mental alienation, written by an alienist, translated by an alienist, and, under the direction of an alienist, printed and bound by the insane." It is published at the Utica Asylum, and deserves a cordial reception.

## TO PREVENT THE SPREAD OF COMMUNICABLE DISEASES.

THE position taken by the New York Board of Health in its endeavors to prevent the spread of communicable diseases cannot be too highly commended, and is deserving of the warmest encouragement and intelligent imitation. Some of the measures proposed may have seemed unduly radical to conservative minds, but the salutary results brought about furnish the justification for the steps already taken. The stand of the Board in favor of the registration of tuberculosis, its watchful activity at the time of a threatened epidemic of cholera, its invaluable aid to the physician in the diagnosis of diphtheria, and its still more recent part in providing for the treatment of diphtheria by means of protective serum, are all matters of common knowledge. The Board, however, is not yet satisfied that it has exhausted its resources in the matter of checking the spread of communicable diseases. In a recent letter to the Sanitary Superintendent, DR. HERMAN M. BIGGS, Pathologist and Director of the Bacteriological Laboratory of the New York Board of Health directed attention to the inadequacy of the current methods of preventing the epidemic occurrence of contagious disease in tenement-houses and apartment-houses, and particularly for the enforcement of isolation of persons suffering with such disease. The methods which have been long employed in the Health Department, *i. e.*, frequent visitation and instruction by Department Inspectors, have been found to be only partially effective. It has been the custom for years in cases of contagious disease for the inspectors of the department to visit the families of the sick persons, inform them as to measures of disinfection and methods of isolation, and at the same time to notify other families in the house of the existence of a case of contagious disease in a given apartment. The notification of all of the inmates of a large tenement-house is a very difficult matter, and even when notified, experience has shown that they soon forget or ignore the existence of illness in the house.

In addition, such notification fails entirely to protect non-residents who may visit the house or apartment. Ladies in search of servants have been repeatedly found in houses or in apartments containing cases of contagious disease, and servants who have been living with families in which there are cases of contagious disease, on obtaining situations frequently go to their employers' houses, carrying

infection with them; or, when relieved from duty for an afternoon or evening, visit families in which there are cases of contagious disease, and not infrequently carry infection back to the houses in which they are employed. Very commonly washing or various kinds of sewing are secretly done by other members of the family in apartments containing such cases, and the garments thus infected on the premises are later returned to the owners. In small shops business is sometimes carried on during the prevalence of a contagious disease in the family, and in one instance recently a number of cases of diphtheria were directly traced to an infected candy-store. The mere notification of the inmates of a house is ineffectual further, because it has been found that, as a rule, families in tenement-houses do not come so much in contact with others in the same house as with families living in other houses, and the latter are entirely unprotected by the methods at present followed.

After careful consideration DR. BIGGS has reached the conclusion that the desired object would be best attained by the placarding of apartments in tenement-houses containing cases of contagious disease, and he has recommended that hereafter the Chief Inspector of Contagious Diseases be authorized, in his discretion, to placard apartments in tenement-houses containing cases of contagious disease; and his recommendation has received the ratification and endorsement of the Health-board.

In the case of diphtheria it is further pointed out that patients are often apparently well long before they are free from the infectious agency, and there is great danger that these patients, especially if children may mingle with other children, and thus transmit the disease. This mode of disseminating disease is of no less importance as regards scarlet fever and measles; in the latter diseases desquamation frequently continues many days after the patient has apparently quite recovered.

It is believed that the placing of placards announcing the existence of contagious disease in a house or apartment would have considerable moral influence both upon the inmates and upon strangers or visitors.

The procedure has for some months been employed in certain classes of tuberculosis, and has proved most satisfactory in the attainment of the object desired. The only objection apparently to be urged against this measure is that the inmates of the apartment may object to the publicity thus entailed. This is exactly the object which the measure is justly and properly designed to subserve, and is the strongest argument in favor of its adoption.

We congratulate the New York Board of Health on the courageous and advanced stand that it has taken and feel sure that its action will be followed by the most salutary results. The experiment, if the course of the Board may be so designated, will be an object-lesson for observation and study by all the large cities of the United States, and the principles involved may be applied to even the smallest community.

## DR. WILLIAM GOODELL.

THE announcement of the death of WILLIAM GOODELL will, perhaps, bring a sense of personal loss to a greater number of physicians than would the death of any other member of the profession in America. DR. GOODELL had hundreds of personal friends and admirers in all parts of the country, and there were thousands more who looked for his medical papers with interest and accepted his advice without question. His position in American gynecology was unique. He was one of the small group of pioneers who made the gynecology of this country what it is, and he alone among these men possessed the literary faculty to a high degree. Had he chosen he could have made his name famous by literary work pure and simple. He had but one equal in this respect among English-speaking physicians—the late OLIVER WENDELL HOLMES. Consequently he was able to present the advances of the new science and art of gynecology in a manner that chained the attention of every reader. Moreover, his work bore such evident marks of keen perception, sound judgment, and a judicial fairness of mind, that what he wrote was not only read with interest and pleasure on account of its pure and attractive style, but it molded the thought and shaped the practice of an astonishing number of followers. A personal acquaintance with DR. GOODELL strengthened the liking and respect which his writings always inspired. His kindness and courtesy to younger men made him many a devoted friend. His instant and enthusiastic response to every worthy appeal for aid could be confidently expected. His presence united a simple kindliness of manner with an innate dignity that could scarcely fail to impress the most indifferent observer.

Highly gifted by nature with a powerful mind, a keen wit and the power of expression, DR. GOODELL

never presumed upon his natural advantages. His work of all kinds was of the most painstaking and methodical character. His case-book was a model of comprehensive and careful note-taking, and his literary work, in which he should have been conscious of masterly ability, was not regarded as completed till every sentence was read and re-read, written and re-written.

The main events of DR. GOODELL'S life are tolerably familiar to many medical men, and they have been described besides in the daily press. He was born in Malta, the son of a missionary. He received his collegiate and medical education in this country and began his medical career in Constantinople. He returned to this country after a few years, and settled in West Chester as a general physician. So unsatisfactory was his progress, however, that he determined to emigrate to the West. His books and furniture were actually packed and addressed to a small town in Kansas when, in 1865, he received the appointment to the Preston Retreat. Here he found congenial work in favorable surroundings, and during the twenty years of his residency he acquired a leading position in his branch of medicine, and this he maintained till failing health last summer forced him to retire. His strength failed steadily, and he died on the 27th of October, in the sixty-fifth year of his age. He was appointed Lecturer on Obstetrics and Diseases of Women in the University of Pennsylvania in 1870, and Clinical Professor of the Diseases of Women and Children in 1874, and he continued in this position until a little more than a year ago, when, on his resignation, he was made Honorary Professor.

There must be many who, like ourselves, mourn not only the disappearance of a distinguished figure from American medicine, whose place cannot be adequately filled, but the loss at the same time of a dear friend, a wise teacher and a safe leader.

## EDITORIAL COMMENTS.

***Religion and Medicine Among the American Negroes.***—Some time ago we commented upon the urgent need of negro physicians, and in reply we receive from the Rev. J. W. Wright, of Independence, Kansas, a courteous letter, showing that 132 colored physicians have been graduated from the Meharry Medical College, at Nashville, Tenn., an institution supported by the Methodist Episcopal Church, and for the education of colored physicians exclusively.

In a pamphlet issued by the *Freedman's Aid and Southern Education Society*, church aid in supporting medical schools is urged on the following grounds:

"We have one medical school in U. S. Grant University, Tennessee, among the white people. This is self-supporting, and forms a nucleus of large influence on behalf of the Church, as well as enabling the Church to influence for Christ and humanity multitudes through those who are educated in this school. We have our Meharry Medical College, at Nashville, Tenn., from which 132 young negro physicians have been graduated. We are now establishing a second medical school in connection with New Orleans University. These are the only medical schools south of the Ohio River and west of the Carolinas in a population of nearly six millions of colored people, where a young colored man can be educated as a physician. The death-rate among the colored people is appalling, being nearly twice as large as among the whites. This is the result of poverty, ignorance, and lack of proper medical attendance and nursing. Christ cared for the bodies as well as the souls of men; so must the Church, especially among our poorer populations. It is the plan to establish nurse-training classes in all our leading schools, and to establish free dispensaries. No more Christly work can be done, and the marvellous results already achieved for the good of the people are beyond computation, or even expression in words."

We most gladly make mention of the foregoing facts, and as heartily commend the work. It is encouraging to find that the religious instinct in this unfortunate people is being used to further what is a true and genuine religious work. But we wish to urge that it be still tremendously more used. The medical aspect should be made primarily important instead of secondarily so. Instead of a hundred or more negro physicians there is the greatest need of many thousands. The use of the funds given for educational purposes by the benevolent should be more largely applied to medical education instead of to theological education. With this people religion is in no danger of suffering and needs no encouragement, whilst the medical need is a "bitterly crying" one. In this view of the case we know also we are in accord with the wisest minds of the colored race. The trustees of the Slater and Peabody funds should seriously consider this. Doctors are needed more than preachers a hundred times over. And we would also suggest to trustees, and to our colored brethren, that instead of establishing what must necessarily be poor-grade new medical colleges on racial lines, it would be far better to help students to secure their medical education at Northern or at other general medical institutions. Preparation for their work will thereby certainly be the better.

***The Teaching of Medicine in Different Countries.***—There are in the twenty medical schools of Germany over 8000 medical students, 3507 of whom are foreigners. In England there are now but 552 students of medicine, extremely few of whom are non-English, and this number is smaller than for many previous years. We append the totals for recent years for the purpose of comparison:

| | | | |
|---|---|---|---|
| 1883 . . | 605 | 1889 . . | 620 |
| 1884 . . | 587 | 1890 . . | 614 |
| 1885 . . | 647 | 1891 . . | 662 |
| 1886 . . | 623 | 1892 . . | 596 |
| 1887 . . | 683 | 1893 . . | 598 |
| 1888 . . | 688 | 1894 . . | 552 |

It is no wonder that England sends up a "bitter cry," in view of this comparative preference of medical stu-

dents for German methods of teaching. Reasons have been sought to account for this remarkable condition, but all come back to the fundamental fact that the Germans are the more zealous, unselfish, and more scientific —in a word, they are the better teachers. It does not lie in the English character to be a good instructor. The Englishman commands rather than teaches. There is no question but that, as any other, he is as good and successful a practiser, as capable a healer of disease, but when he tries to tell young men what he knows, and to inspire them with the enthusiasm of his calling, he is a sad failure.

But we wish in no egotistic mood to call the attention of young Americans to the fact that there are no better medical teachers in the world than their own countrymen. With us teaching is natural, and no better facilities for post-graduate study exist anywhere than in the United States. They may not be quite the perfection of systemization, certainly not the remorseless and cruel use of "clinical material" to be found in German institutions, but we have in every one of our large cities, and in many small ones, hundreds of men who know their science, with as good intellects, and who practise their art with as perfect skill as are to be found in Teuton-land. Instead of running away thousands of miles, any student can find at home the most willing and capable teachers, an opulence of hospitals and laboratories, that await his demand. We have too long spurned our splendid opportunities. We advise none to go abroad for what can be found in abundance at home. We are producing as good text-books as are made in the world, and nowhere can be found a higher and purer enthusiasm for medical study and research than burns in the hearts of Americans. This matter of studying abroad is a fashion, a fad, we were about to say, that appeals to weak minds, but which is unscientific, unpatriotic, and to be discouraged on any ground of sense, common or uncommon.

***Unsatisfactory Researches.***—In a paper in the last year's volume of *Virchow's Archiv*, ADOLF GOTTSTEIN reviews the action of living organisms on hydrogen dioxid, and claims that this substance may be utilized as a means of estimating approximately the number of bacteria in water-samples. He states that if less than one-thousand living microbes exist in a cubic centimeter a scarcely appreciable evolution of oxygen occurs after fifteen minutes' action, while if many thousands are present a rapid action occurs. It is obvious that such a method would be of great value in sanitary chemistry. Gottstein gives no details of his experiments, except the method of making the test, and does not say whether the hydrogen dioxid was used in acid or alkaline solution, nor what strength was employed. These points are obviously of the greatest moment, as the tendency of the dioxid to decomposition is influenced by its strength and reaction. In a recent number of the *Centralbl. f. Bakt. und Parasitenk.*, H. Laser reviews Gottstein's work, and finds that the claims are not established. Laser's experiments indicate that the alleged simple relation between the number of living microbes and the evolution of oxygen does not exist. It is possible that differences in the quality of the hydrogen dioxid used may have caused some of the discrepancy, but it is probable that the first paper rested on insufficient work. The incident shows very clearly the danger that arises from the multitude of workers in the field of biologic chemistry, many of whom publish results without sufficient experimentation.

***Water-Supplies in Pennsylvania.*** — The ninth annual (1893) report of the State Board of Health and Vital Statistics of Pennsylvania, lately issued, gives some analyses of waters from various parts of the State. The funds at the disposal of the Board do not permit of original research; the analyses are mostly made at the suggestion and expense of the local boards and in consequence of existing epidemics. Twenty-three analyses are given, which indicate five samples unfit for drinking-purposes and two suspicious. The number of analyses is too small to form a basis for a general inference as to the condition of the water-supplies over a territory so large and so varied as Pennsylvania; but in view of the frequency of local epidemics of typhoid fever, and of the liability of pollution of surface and subsoil waters, the necessity of more extended investigation and of devising of means of sewage-purification and stream-protection is evident. Legislation for the protection of water-courses is certainly wanted, and it is necessary also that some definite means of establishing sewage-disposal companies should be provided.

***Ocular Ballottement.***—The diagnosis of fluid vitreous with floating opacities may be aided by a little method that is not usually laid down in the text-books. The retinoscopic mirror is used in the same way as in indirect ophthalmoscopy. The patient has to be "trained" a little or carefully instructed in order to carry out the manipulation rightly, the essential point of which consists in halting a downward sweep of the eye suddenly and at such a point that the oculist can have a good view of the post-pupillary field. Direct the patient to look up to the ceiling and then to swiftly look at an object in front and on a line horizontal with the eyes, holding the gaze steadily there. If opacities floating in a fluid vitreous exist, this sudden "flip" of the vitreous chamber upward, followed by a sudden stoppage, flings the opacities upward, and with the ophthalmoscopic mirror they will be seen again to descend like snow-flakes falling outside of a window in the night. This method of diagnosis might appropriately be named *ocular ballottement.*

***Effects of Poisonous Food.***—An eruptive skin-disease now prevailing in London almost as an epidemic, mostly in workhouse-infirmaries, has been ascribed by some authorities to the milk-supply. Bacteriologic examinations of milk supplied to several infirmaries have been made, but no results indicative of a causal relation have been obtained. The disease has a death-rate of over 10 per cent. In the same number of the *British Medical Journal*, from which we condensed the foregoing account, is to be found some statistical information as to the effects of poisonous food. During the months of June, July, and August, nearly one hundred cases with five deaths have been reported. These were mostly from canned meats. The symptoms were vomiting, diarrhea, severe abdominal pains, cramps, and collapse. These symptoms might readily give rise to suspicions of criminal

poisoning. A case has recently been reported in which the greater part of the population of a village in Russian Poland was made sick by eating tainted herrings.

***Hog-Cholera and Swine-Plague.***—Veterinarians will be much interested in the results of a series of careful experiments conducted in the Pathological Laboratory of Johns Hopkins University on Hog-cholera and Swine-Plague, and presented in a recent brochure.[1]

These two swine-epizootics have been so commonly confused as to prevent the collation of reliable statistics concerning their relative frequency, virulence and treatment. Fortunately, this state of confusion has been finally disentangled by the clear presentation of the distinguishing characters of the microbes of the two diseases, as well as those of their peculiar lesions.

## REVIEWS.

MICROÖRGANISMS IN WATER: THEIR SIGNIFICANCE, IDENTIFICATION, AND REMOVAL. By PERCY FRANKLAND, Ph.D., B.Sc., F.R.S., and MRS. PERCY FRANKLAND. Octavo, pp. xi, 520, and index, with many illustrations. London and New York: Longmans, Green & Co., 1894.

SEVERAL features give unusual interest to this book. As a product of the joint authorship of husband and wife, both already well known in the field of original research, it is an earnest of the results of the higher education of women. The want of comprehensive information in a compact form in English has been seriously felt by sanitary chemists and engineers, particularly in America, where more attention seems to have been paid to the subject than in England. Percy Frankland has been engaged in investigation of microbic life in water and the effects of filtration, subsidence, etc., for many years. The present work republishes much of the matter that appeared in journals, but supplemented by later observations. Mrs. Frankland's most important work has been doubtless in the joint researches on the nitrifying microbes.

The work begins with the usual account of the methods of preparation and use of culture-media. The bacterial contents of various waters are treated of in about thirty pages; then follow one-hundred pages on the purification of water. This is especially Frankland's field, and much interesting matter is presented. It is, however, with surprise, and even irritation, that we note that no mention is made of the ingenious process of purification by metallic iron, reference to which was made in an editorial comment in THE NEWS some time ago. This process is operated on a large scale in several Continental cities, notably Antwerp, and it seems strange and unfair that it should not be noticed. Even if the authors of the book have doubts as to the method, these doubts should have been set forth, for other processes acknowledged to be of little value are given some space. Extended reference is made to the work of the Massachusetts State Board of Health. A long chapter on the influence of light on microörganisms in water is summarized by the statement that sunshine is to be recognized as a powerful bactericide, but the value of it is liable to be overrated. Anthrax-spores, for instance, resist the action of sunlight for many hours. The application of insolation has, however, but minor interest in the management of public water-supplies, as we know that filtration can be made to remove practically all the dangerous microbes from water. An appendix of over a hundred pages gives descriptions of each species of microbe which has been reported as occurring in water. No satisfactory system of classification for these organisms has yet been found. The present work does not add to the vividness of this department of biology by adopting an arrangement based on the similarity of the pigment produced, which is equivalent to describing in sequence all plants which produce red flowers.

In consulting a work of this character the sanitarian turns promptly to the description of the supposed specific bacillus of typhoid fever. Much space is given to the topic, and it is clearly shown that a large proportion of the published statements are unreliable, and that especially the *b. coli communis* has often been confounded with *b. typhosus*. Great is, however, our surprise to note an entire ignoring of Vaughan's important contributions to this field. The omission is a serious one, for if the authors had embodied the results that the American investigator published some years ago still greater doubt would have been thrown on the specific identity of the typhoid-fever germ. Enough is now known to show that no reliance should be placed on reports of finding of this microbe unless the methods of identification be given.

The work is well printed, and will find a wide acceptance.

TRANSACTIONS OF SOCIETIES:

Transactions of the American Gynecological Society. Vol. 19. For the year 1894.

Transactions of the Medical Society of the State of New York for the year 1894.

Transactions of the Medical Society of Virginia. Twenty-fourth session, Charlottesville, Va., October, 1893.

Transactions of the Texas State Medical Association. Twenty-sixth annual session, Austin, Texas, April, 1894.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland. Ninety-sixth annual session, Baltimore, Md., April, 1894.

Transactions of the South Carolina Medical Association. Forty-fourth annual meeting, Rock Hill, S. C., April, 1894.

Transactions of the Association of American Physicians. Ninth session, Washington, D. C., 1894.

Transactions of the Michigan State Medical Society for the year 1894.

Transactions of the Medical Society of the State of California. Session of 1894.

Transactions of the Vermont State Medical Society for the year 1893.

Transactions of the Indiana State Medical Society. Forty-fourth annual session, 1893.

THE annual influx of society *Transactions* brings with it such a vast amount of literature that mere mention of

[1] Remarks on Hog-Cholera and Swine-Plague, by William H. Welch, M.D., Professor of Pathology Johns Hopkins University, and A. W. Clement, V.S. Pamph. 37 pp.

a few of the more prominent features of the various volumes is all that a limited amount of space will permit. While it is true that much that appears in volumes of this description is but a presentation of old material in new garb, there are always to be found therein valuable contributions to the medical knowledge of the day. Thus, in the *Transactions of the American Gynecological Society* among other meritorious papers there is a complete *résumé* of the accepted management of that difficult obstetric complication, face-presentation, together with an exposition of the present status of symphysiotomy in obstetric surgery. The discussion by eminent practitioners of abdominal surgery, menstruation and its abnormalities, and diphtheria, as recorded in the *Transactions of the New York Medical Society* is truly brilliant, and from a practical standpoint leaves untouched little of these vital questions that is worthy of consideration. The same may be said of the interesting series of papers on tuberculosis, to be found in the *Transactions of the Michigan Society*, and on chronic nephritis and the place of electricity in general practice in the *Transactions of the Medical Society of Virginia*. Of more than passing interest are the papers by George Dock on "Osteomalacia," and by J. P. Crozer Griffith on "Tetany in America," recorded in the *Transactions of the Association of American Physicians*. The *Texas State Medical Association* offers a truly valuable collection of papers which merits a more substantial binding than that provided by the society. The rich and varied medical botany of the far West is ably presented in the two papers by W. P. Gibbons on "Poisonous Plants of the Pacific Coast," and "Indigenous Botany," both to be found in the *Transactions of the California State Medical Society*. An instructive contribution to the history of medicine in the United States is contained in Dr. Wishard's paper on "Medical Men and Medical Practice in the Early Days of Indianapolis," in the *Indiana Transactions*. The dominant feature of the *Transactions of the South Carolina Medical Association* is the address by Howard Kelly on recent results in hystero-myomectomy; of the *Vermont Transactions*, the "Location of the Lesion in Paralysis," by M. R. Crain; and of the *Transactions of the Maryland Medical and Chirurgical Faculty*, the President's address on the extinction of tuberculosis.

GONORRHEA: BEING THE TRANSLATION OF BLENORRHEA OF THE SEXUAL ORGANS AND ITS COMPLICATIONS. By DR. ERNEST FINGER, Docent at the University of Vienna. Third revised and enlarged edition, with seven full-page plates in colors, and thirty-six wood-engravings in the text. 8vo. pp. 324. New York: William Wood & Company, 1894.

So far as we are aware, this third edition of Prof. Finger's work is the first to appear in English dress. The translator's name is not given, but he has discharged his task very creditably.

After an introductory historical chapter, an exposition of the anatomy and physiology of the urethra is presented, the important fact being especially insisted upon that the canal is divided by the compressor muscle into two sharply-defined portions, anterior and posterior. We believe that by practical surgeons the distinction between the inflammations of these two regions has been recognized; but we are not aware that any systematic writer has so clearly set it forth or pointed out their anatomic boundary.

Acute urethritis is next discussed, first as affecting the anterior part of the canal, and then the posterior; the diagnosis, prognosis, effects, and treatment of each condition being duly dwelt upon. We need only say that the views presented are in full accord with the surgery and pathology of the day.

Under the head of chronic urethritis our author lays much stress upon the use of the endoscope, describing the appearances revealed by it, and the technique of its employment. We are inclined to think that this instrument will long remain, as at present, in the hands of a few specialists, and that the profession at large will be content to accept their statements of the pathologic conditions observed by them.

The complications of blenorrhea in the male are next discussed: balanitis, infiltration and abscess, inflammation of Cowper's glands, prostatitis, epididymitis, inflammation of the seminal vesicles, and cystitis.

Chapter V is devoted to the subject of blenorrhea in the female; Chapter VI, to its complications: vulvitis, inflammation of Bartholin's glands, and inflammation of the uterus and its appendages.

Finally, a chapter is given to such complications as are common to both sexes: gonorrheal rheumatism, endocarditis, exanthemata, ophthalmia, and adenitis.

We think it would have been better to have had running headlines indicating the material contained on each page. Nor do we approve of appending to the name of each author quoted the date merely of his contribution; references in foot-notes, or a bibliographic table would enable the reader, should he so desire, to follow up the study of the views or observations mentioned. Some exception may be taken also to "Bartholinitis" and "Cowperitis," the latter being even used in the plural, "Cowperitides" (!) Notwithstanding these minor criticisms, we regard this book as a valuable addition to surgical literature, and commend it to the favor of the profession.

## CORRESPONDENCE.

### INFILTRATION-ANESTHESIA.

*To the Editor of* THE MEDICAL NEWS,

SIR: In an abstract under the head of "Infiltration-Anesthesia," p. 442 of THE MEDICAL NEWS, of October 20, I was surprised to find Schleich credited as "the originator of the method."

This is surely an error, for I have used it for over twenty years in preference to *deep* hypodermatic injections. In 1875, when in charge of the Post Hospital at the Portsmouth (N. H.) Navy Yard, I employed it extensively (as did also my assistant, Dr. Heffinger, and others) as a local anesthetic, as a substitute for injections of morphin in sleeplessness, and for the relief of neuralgic and other pains; hot and cold water, salt water, diluted alcohol, carbolized water, glycerin and oils, were used with good results.

The needle was carefully introduced about *half its length* parallel to the surface of the skin, and a large hypodermatic syringe *full of hot water* was very slowly injected intracutaneously, raising a large, white anesthetic wheal, the

appearance of which greatly impressed the sailors and marines.

I fancy the method was introduced by Dieulafoy, and was known to the profession long before Schleich drew attention to it in the *Therapeutische Monatshefte.*

Yours, faithfully,

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## NEWS ITEMS.

***Foot-ball "Accidents."***—We believe that it was Mr. Jorrocks who said that hunting possessed all the glories of war and only five-and-twenty per cent. of its danger. The foot-ball percentage must be considerably higher, for though the season is yet only a few weeks old, we have already before us a list of casualties which would do credit to a little war. Since we referred to the matter last, in connection with a sudden death from injuries received by a player, we have received reports of the death of a man at Windhill, near Leeds, who during a game fell "in the ordinary way," a number of other players fell over him, and he died on the following day. A Preston player named Hall fell and broke his arm; the general symptoms became serious, and this young man of eighteen died shortly of tetanus. In an engagement between the Blackburn Rovers and Burnley after five minutes' play one man broke his leg in a collision, and during the second half another man was carried off the field with an injured leg. On the same day, near Burton-on-Trent, a player "fell with his leg under him in such a way that it was fractured." At Llanelly, in a match between that place and Neath, two men were injured, but their injuries were slight when compared with the average. So the list grows steadily from week to week, and last Monday's papers told us how on Saturday the head master of Appeldurcombe College, Ventnor, sustained a compound fracture of the right leg during a foot-ball match, and how the captain of the Maidstone team, playing at Dover, "collided with a goal-post and split his collar-bone; he was removed to the hospital." The hunting casualty-list this year contains, we believe, the name of only one lady badly wounded, but recovering. On the whole, foot-ball as at present played appears to be about as dangerous an amusement as a South American revolution.—*British Medical Journal, October 29th.*

On October 3d, at Kingswinford, Staffordshire, an inquest was held on the body of Frank Griffiths, a member of the Kingswinford Albion Foot-ball Club, who died on the 1st instant from internal injuries consequent upon a kick in the abdomen. Whilst playing for his school on the same date against Hesketh Park, J. T. Smith, aged twenty-eight, an assistant master at Bickerton House, Birkdale, Southport, received a blow in the abdomen from the knee of an opponent. The accident was not deemed serious at the time, and medical aid was not sought until after the lapse of an hour and a half. He died on the morning of the 15th from peritonitis. The following accidents also occurred on Saturday, October 13th: In a match between Sutton and Keighley Trinity, W. H. Hardacre, one of the Sutton home forwards, sustained a fracture of the clavicle. During a match between Burnley and Darwen, played at the latter town, a player was seriously injured in a scrimmage, but the real nature of his injuries has not transpired. A youth aged eighteen fractured his right patella whilst playing in a match between All Hallows and the University Extension team at Clapton.—*The Lancet, October 20th.*

From two or three American newspapers that come to us we gather the following—a few of many similar delightful proofs of the physical, moral, and educational tendencies of the game:

HILLSDALE, MICH., October 23.—The foot-ball game between Olivet and Hillsdale was won by Hillsdale, score 34 to 6. The boys had it in for each other, and the consequence was several were badly bunged up. Snyder, of the Hillsdale, was so badly battered he had to have a substitute. Olivet left one of its foot-ball players at the fraternity house last night with a broken rib. One of the team went back minus half a dozen teeth, bunted out by Hillsdale's colored player.

"This makes the seventh broken clavicle at Harvard this year."

Breckinridge, of Princeton, was injured at Hightstown, N. J., in Saturday's game, and was removed unconscious from the field.

Haverford seems to be undergoing her usual course of hard luck, and at present five of her best players are prevented from playing, either on account of injuries or other circumstances. Hay, Morris, and Scattergood have stopped playing, while Alsop and Captain Webster have sustained such injuries as to prevent them from playing for some time.

The Lehigh team is badly crippled, seven men being on the injured list, and the men improve but slowly. Twisted and sprained ankles, turned joints, overtraining, etc.

Holly, Brown, Morse, and Ward have not appeared since the Cornell game, two weeks ago. Reiter and Poe were hurt, and have also not been able to play since the Lehigh game.

On Saturday, Alsop, Haverford's best tackle, hurt the same knee which was wrenched last year, and which prevented him from playing in the Swarthmore game last fall. The loss of Alsop weakens Haverford's team very much.

Captain Lincoln, of the Dickinson College eleven, has broken his collar-bone.

In Brooklyn rough play prevailed throughout the contest, and in several instances blows were exchanged between the players. The feeling between the teams was very bitter, and it looked at one time as if the crowd were going to see an old-fashioned rough-and-tumble fight. The interference of others alone prevented such a scene. Hard names passed between the men when they left the field, and the police, apprehensive of another collision, rushed among the players and cautioned them that a repetition of the pugilistic exhibitions would result in considerable trouble for the offenders.

As a result of the rough character of the play two players were so badly used up that they were compelled to leave the field.

Just as Taussig neared the ropes, Emmons, the Harvard captain, gave him a vicious push. Taussig promptly rooted up the ground for quite a distance with his rubber nose. When play was resumed he watched his chance

and dug his head into the pit of Emmons' stomach so fiercely that it almost laid the big Harvard man out. In a scrimmage at this juncture big Mackie, of Harvard, provoked hostilities with Colnan, his opponent in the line, and was more than ready to quit when the Ithacan came back with the same kind of medicine.

The Secretaries of War and of the Navy have refused, upon the recommendation of Colonel Ernst and of General Schofield, to allow the Military and Naval Academy teams to play on Thanksgiving Day. General Schofield wrote:

"The game of foot-ball as recently played requires some essential modifications. This, I believe, is the concurrent public sentiment on the subject. The required modification will be difficult to enforce for the reason that the objectionable features are those which contribute most to success in a contested game. They are those features which are most dangerous to life and limb, and may be said to most resemble military operations. They are none the less objectionable on that account. While it is undoubtedly true that experience in actual war is the best possible military training, modern civilization does not permit the making of war simply for the purpose of training an army. For like reasons the practice in peace of those operations which most resemble war must be condemned, notwithstanding the fact they are manifestly beneficial as military training.

"The reports of the superintendent show that the casualties in the play of foot-ball at West Point are much greater than they ought to be, and the same may also be said in respect to riding, although expert horsemanship, being indispensable in a large part of the military service, must be acquired, although at much risk.

"There is little need of foot-ball at West Point simply as a means of physical training, and as such it is open to the objection that it is far from universal. Probably the young men who most need such training do not get it, but only those who, being already endowed with splendid physical development, are capable by additional training of successful competition with the best of any other selected class."

***The New York State Association of Railway Surgeons*** will hold its fourth annual meeting in the New York Academy of Medicine, November 15, 1894. The following program has been arranged. President's address: "Important and Unsettled Questions in Railway Surgery," Dr. M. Cavana, of Oneida; "When Shall We Amputate? (*a*) Arguments Favoring Early Amputations," by Dr. W. L. Estes, of South Bethlehem, Pa.; (*b*) "Arguments Favoring Delayed Amputations," by Dr. T. H. Manley, of New York; (*c*) "Technique of Amputation," by Dr. John A. Wyeth, of New York; "Asepsis and Antisepsis in Surgical Work," by Dr. F. A. Stillings, of Concord, N. H.; "Special Features in Railway Surgery," by Dr. C. B. Herrick, of Troy; "The Immediate Care of Railway Injuries," by Dr. J. A. Van Duyn, of Syracuse; "Important Factors in Unusual Results Following Traumatisms," by Dr. R. S. Harnden, of Waverly.

***Johns Hopkins Medical School.***—The second year of the undergraduate department in medicine opened on October 1st. There were 31 entries, making in the two years 50 students in all. Of these, 13 are graduates of the Johns Hopkins University; 8 of Yale; 5 of Harvard; the others of smaller colleges throughout the country. Of the 10 women undergraduate students 3 are from Smith College; 3 from Vassar; 1 from Wellesley; 1 from Bryn Mawr.

States are represented as follows: Maryland, 15; New York, 7; New Jersey, 4; Connecticut, 4; Massachusetts, Ohio, Wisconsin, and California, each 3; Indiana, Kentucky, Virginia, Alabama, and Minnesota, each 1, and Canada 2.

***A Statue of Dr. J. Marion Sims*** was unveiled in Brooklyn on October 21st amid impressive ceremonies. The statue is unique in being the first statue of a physician ever erected. The pedestal bears this inscription: "J. Marion Sims, M.D., LL.D.; born in South Carolina, 1813; died in New York city, 1883. Surgeon and Philanthropist, founder of the Woman's Hospital, State of New York. His brilliant achievements carried the fame of American surgery throughout the civilized world. In recognition of his services in the cause of science and mankind he received the highest honors in the gift of his countrymen and decorations from the Governments of France, Portugal, Spain, Belgium, and Italy."

***Horace Wells Anniversary Celebration.***—A committee of the American Dental Association, with Dr. J. D. Thomas, of Philadelphia, as chairman, has arranged for a national celebration of the fiftieth anniversary of the discovery of the anesthetic properties of nitrous oxid by Dr. Horace Wells, to be held in Association Hall, on December 11, 1894.

A paper upon the "History of Anesthesia" will be read by Prof. Thomas Fillebrown, of Boston, and one on the "Benefits of Anesthesia to Mankind" by Prof. James E. Garretson, of Philadelphia.

The meeting will be followed by a banquet at the Union League at 6.30 P.M.

***A Medical Library Association*** has been recently organized in Grand Rapids, Michigan, with the purpose of forming a reference-library of medicine and allied sciences. The new organization has a membership of about fifty, including not only physicians, but dentists and pharmacists as well.

One of the features of the association will be the admission of non-residents to membership, who upon payment of a small annual fee may avail themselves of the advantages of the library.

***Discussion on Appendicitis.***—At the meeting of the College of Physicians to be held on November 7th, Dr. John B. Deaver will read a paper entitled "Further Observations on Appendicitis: with a Report of Sixty-one Cases of Chronic Appendicitis, with One Death." Dr. Charles McBurney, of New York, will open the discussion.

***Dr. A. H. Buckmaster***, one of the editors of the *American Gynecological and Obstetrical Journal*, has been elected professor of the practice of medicine and of obstetrics and gynecology in the University of Virginia.

***Dr. Roux***, a pupil of Pasteur, who has been engaged in the preparation of serum for the specific treatment of diphtheria, has been made a Commander of the Legion of Honor.

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BOOKS AND PAMPHLETS RECEIVED,

Annual Report of the Managers of the Sanitarium Association of Philadelphia, 1893. Philadelphia: Allen, Lane & Scott's Printing-house, 1894.

The Tubercular Diathesis Controlled by Gold and Manganese in Combination. By J. Blake White, M.D. Reprinted from the American Medico-Surgical Bulletin, 1894.

Clinical History of a Case of Spindle-Celled Sarcoma of the Chorioid. With a Study of the Microscopic Condition of the Growth. By Charles A. Oliver, M.D. Reprinted from the Proceedings of the American Ophthalmological Society, 1893.

A Case of Cyst of the Cerebellum. By William F. Wegge, M.D. Reprinted from the Journal of the American Medical Association, 1894.

A Contribution to the Anatomy of the Human Retina, with a Special Consideration of the Terminal Loops of the Rods and Cones. By W. F. Norris, M.D., and James Wallace, M.D. Reprinted from the University Medical Magazine, 1894.

De l'Hydronéphrose Intermittente. Par le Dr. Lucas-Championniére. Extrait du Journal de Médecine et de Chirurgie Pratiques, 1892.

Modification du Taux de l'Urée dans l'Urine. Par le Dr. Just Lucas-Championnière. Extrait du Journal de Médecine et de Chirurgie Pratiques, 1893.

Ligation of the Base of the Broad Ligaments, Including the Uterine Arteries, per Vaginam, for Fibroids of the Uterus. By Augustin H. Goelet, M.D. Reprinted from the American Medico-Surgical Bulletin, 1894.

The Legal Responsibility of the Aged. By J. J. Caldwell, M.D. Reprinted from the Medical and Surgical Reporter, 1894.

Transactions of the Massachusetts Medico-Legal Society. Vol. II, No. 3, 1893, Boston: Damrell & Upham, 1893.

Transactions of the Massachusetts Medico-Legal Society. Vol. II, No. 4, 1894. Boston: Published by the Society, 1894.

The Middlesex Hospital, W. Reports of the Medical and Surgical Registrars and Pathologist for the Year 1892. London: H. K. Lewis, 1894.

The Uric-Acid Diathesis and its Treatment. By John F. Barbour, A.M., M.D. Reprinted from the American Therapist, 1894.

Charaka-Samhita. Part IX. Translated into English. Calcutta: Published by Avinash Chandra Kaviratna.

Clinical History of the Case of President James Abram Garfield. By Robert Reyburn, A.M., M.D. Reprinted from the Journal of the American Medical Association, 1894.

Report of the Leprosy Question in Louisiana. By Isadore Dyer, Ph.B., M.D. Reprinted from the Proceedings of the Orleans Parish Medical Society, 1894.

Leprosy. By Isadore Dyer, Ph.B., M.D. Reprinted from the Texas Medical Journal, 1894.

Proceedings of the Oregon State Medical Society, 1892-93. Portland, Ore.: Glass & Prudhomme, Printers, 1894.

Der Alkohol als Genuss und Arzneimittel. Vortrag von Dr. A. Jaquet. Benno Schwabe, Schweighauserische Verlagsbuchhandlung. Basel, 1894.

The Importance of Early Recognition and Treatment of Obstructive Diseases of the Upper Respiratory Tract. By Joseph S. Gibb, M.D. Reprinted from the Transactions of the Philadelphia County Medical Society, 1894.

Amputation of the Entire Upper Extremity (including the Scapula and Clavicle) and of the Arm at the Shoulder-joint. By W. W. Keen, M.D. Reprinted from the American Journal of the Medical Sciences, 1894.

Les Universites des Etats-Unis et du Canada et Spécialement Leurs Institutions Médicales. Par le Dr. O. Laurent. Bruxelles: H. Lamartin. Paris: G. Carré, 1894.

Teno-Suture and Tendon Elongation and Shortening by Open Incision; Advantages and Disadvantages of the Various Methods. By H. Augustus Wilson, M.D. Reprinted from the International Clinics, Vol. I, Fourth Series.

Text-book of Medical and Pharmaceutical Chemistry. By Elias H. Bartley, B.S., M.D. Third edition, revised and enlarged. Philadelphia: P. Blakiston, Son & Co., 1894.

Ophthalmia Neonatorum; Contraction of Eyelids; Glaucoma; Grattage for Granular Lids. By L. Webster Fox, M.D. Reprinted from the Medical Bullatin.

History of the Drop-Bottle. By L. Webster Fox, M.D. Reprinted from the Ophthalmic Record, 1894.

Immediate Capsulotomy following Removal of Cataract. By L. Webster Fox, M.D. Reprinted from the Medical and Surgical Reporter, 1894.

Some Anatomical and Surgical Relations of the Parts involvrd in the Operation of Intra-cranial Neurectomy of the Fifth Pair of Nerves and Removal of the Gasserian Ganglion. By William J. Taylor, M.D. Reprinted from the Trahsactions of the Philadelphia County Medical Society, 1894.

On the Absorption of Iron in the Animal Body. By A. B. McCallum, M.B., Ph.D. Reprinted from the Journal of Physiology. 1894.

Thirteenth Annual Announcement of the College of Physicians of Chicago, Session of 1894-95. Chicago: Published by the College, 1894.

Transactions of the Vermont State Medical Society for the Year 1893. Published by the Society.

Diseases of the Nose and Throat. By F. De Havilland Hall, M.D., F.R.C.P., Lond. Philadelphia: P. Blakiston, Son & Co., 1894.

The Operative Treatment of Internal Hemorrhoids as Practised by American Surgeons. By Clausé A. Dundore, M.D. Reprinted from Mathews' Medical Quarterly, 1894.

Contribution a l'Étude de l'Ulcère Perforant de la Cloison du Nez. By Dr. E. J. Moure. Paris: Octave Doin, 1894.

Congenital Occlusion of the Posterior Nares. By William Scheppegrell, A.M., M.D. Reprinted from the Annals of Ophthalmology and Otology, 1894.

Albany Medical College, Catalogue for 1893-94 and Announcement for 1894-95.

Seventy-fourth Annual Announcement of the Philadelphia College of Pharmacy, 1894.

The Martindale Herbarium. Reprinted from the American Journal of Pharmacy, 1894.

Nuovo Metodo di Cura della Tubercolosi Polmonare. Per il Dottore Carasso Giovanni Michele. Estratto dal Giornale Medico del R. o Esercito e della R. A. Marina, 1894,

Epidemic of Smallpox in Muncie. Pamphlet. Indianapolis: Wm. E. Burford, 1894.

The Eye-Affections of Diabetes. By Harry Friedenwald, A.B., M.D. Reprinted from the Maryland Medical Journal, 1894.

Discussion on the Prevention and Communicability of Phthisis Pulmonalis before the Michigan State Medical Society. Remarks by E. L. Shurly, M.D. Reprinted from the Proceedings of the Michigan State Medical Society, 1894.

Fifty-fourth Annual Announcement of the Missouri Medical College, Session 1894-95, and Catalogue of Session 1893-94. St. Louis, Mo.

A Case of Cysticercus of the Vitreous. By W. Cheatham, A.B., M.D. Reprinted from the Annals of Ophthalmology and Otology, 1894.

Manhattan Eye and Ear Hospital Reports. No. I. New York, January, 1894.

Department of the Interior, Census Office. Vital Statistics of New York City and Brooklyn, covering a Period of Six Years ending May 31, 1890. By John S. Billings, M.D., Surgeon U. S. A., Expert Special Agent. Washington, D. C.: Government Printing Office, 1894.

The Retrospect of Medicine. A Half-Yearly Journal, containing a Retrospective View of Every Discovery and Practical Improvement in the Medical Sciences. Edited by James Braithwaite, M.D., Lond. Vol. cix. January-June, 1894. London: Simpkin, Marshall, Hamilton, Kent & Co., Limited, 1894.